

Inside Dope

By GEORGE
F. TAUBENECK



Learn to live and laugh —
thus delay your epitaph

Stories of the Week
A New Game
Last Gasp

Stories of the Week

Traveler had 20 minutes to kill in a railroad station. He put a penny in one of those weight-and-fortune pinball machines, which spewed out a card:

"You weigh 180, your name is Joe Jones, and you're catching the 7:45 for Philadelphia."

Completely taken back, the traveler walked outside to clear his head. With disbelief he tried the penny machine again. Out came an identical card.

Again he walked outside for fresh air, came back, and put another penny in the machine. The third card read:

"You weigh 180, your name is Joe Jones, and you've monkied around until you missed the 7:45 for Philadelphia."

Another fortune-weight machine story:

"Look at this card," preened a husband. "It says I'm intelligent, good looking, and have a grand disposition."

His wife examined the little card.

"Uh huh. It has your weight wrong, too."

A New Game

Recently "Inside Dope" mentioned interest in nostalgic colloquial phrases. Response from readers was astounding. They've made it a New Parlor Game.

Herewith a few stellar additional contributions:

Waterbury, Conn.

Speaking of expressions, here are a couple of my favorites—they're Pennsylvania Dutch:

"My off is all"—meaning my vacation is over.

"It doesn't make"—meaning something doesn't work (like a doorbell).

WALTER JUDSON

Tri-Cities Engineering Co.
Bristol, Va.

Editor:

In line with your and Mr. Bijun's search for American Folk Talk: only this past month I happened upon a new "idiom" to me.

A maintenance engineer in one of southwest Virginia's industrial plants in referring to a recently imported superintendent to his plant said:

"He's about as useful as teats on a boar hog."

"HUBIE" HUNT

Houston, Texas

Here are a few more colorful
(Concluded on Page 12, Col. 1)

Local Stumbling Blocks For Contractor-Dealers

Builders in many cities aren't getting adequate valuation from government lending agencies for the presence of air conditioning equipment in new homes, contractor subscribers complain to us.

Income and credit requirements are being raised to a point where buyers who can qualify for an ordinary house arbitrarily are shut out of the air conditioned home they desire.

Truly, it is now feasible to produce air conditioned houses priced near \$15,000. Even so, too many builders are lukewarm toward air conditioning, because FHA, VA, and private lenders aren't accruing the sensible worth of an air conditioned home.

According to the whims of local government agents, credit requirements for home buyers who need government-

(Concluded on Page 16)

Philco Buys Bendix NCRSA To Hold Home Laundry Div., San Francisco Effective Nov. 30 Meeting Dec. 3-4

PHILADELPHIA — Philco Corp. confirmed trade reports that it has purchased the Bendix home laundry equipment business of Avco Mfg. Corp. in the United States and throughout the world except in Canada.

James M. Skinner, Jr., Philco president, said Philco has acquired Bendix trade-marks, patents, tools and dies, foreign licenses, and current inventories of Bendix laundry equipment and parts. The transfer will be effective Nov. 30.

Skinner added that Bendix washers and dryers will be marketed through Philco distributors and dealers. The purchase price was not disclosed.

At the same time, Skinner said a manufacturing agreement has been concluded with Avco under which Bendix laundry equipment and Philco electric ranges will be manufactured to Philco specifications in Avco's facilities at Nashville, Tenn. This arrangement will augment Philco's laundry equipment manufacturing operations at Philco's Dexter Div. at Fairfield, Iowa.

Skinner said that beginning
(Concluded on Page 4, Col. 4)

Fedders Ups Cost of Most Units \$5 to \$10

MASPETH, N. Y.—Fedders-Quigan Corp. raised list prices on most models in its air conditioner and dehumidifier lines by about \$5 to \$10.

A spokesman for the firm said increases were made necessary by mounting labor and raw material costs. Under the new price schedules the company's 3/4-ton deluxe room air conditioner, for example, will sell for \$289.95. Its former retail tag had been \$279.95.

There will be corresponding increases in distributor costs, the spokesman pointed out. All "A" and "B" chassis models and some "C" chassis units are affected.

PHILADELPHIA — A program built around the theme, "Planning Produces Profits," has been announced by the National Commercial Refrigerator Sales Association for its 10th annual convention to be held Dec. 3-4 at the Hotel Mark Hopkins in San Francisco.

Panel discussions, followed by question-and-answer periods, are among program features.

In the first of these, officials of four equipment manufacturers will tell what they would do "If I Were a Distributor..." with respect to the extent of store planning and engineering services offered; sales pricing standard; organizing the service department; and approaching
(Concluded on Page 6, Col. 1)

Trion Cuts Air Cleaner Prices, Will Up Volume

PITTSBURGH — Trion, Inc. maker of electronic air cleaning equipment, announced a new pricing system plus flat price reductions ranging from \$300 to \$5,000, or 8 to 30%, on most units.

Air cleaner prices will now be based on specific pieces of equipment, the company said, instead of cleaner air capacity. This is said to mean a further saving to most buyers.
(Concluded on Back Page, Col. 5)

Fluor Div. To Design, Make, Market Cooling Towers In 3 Series

WHITTIER, Calif. — Fluor Products Co., a division of The Fluor Corp., Ltd., designer and prefabricator of atmospheric and mechanical draft cooling towers since 1920, has established a separate division to design, manufacture, and market a complete line of cooling towers for the air conditioning and refrigeration industry.

Basic designs, engineering,
(Concluded on Page 33, Col. 4)

UA and Sheet Metal Workers Agree on Work Jurisdiction

Vornado Offers Auto Conditioner, New Room Units

WICHITA, Kan.—A "radically new" Vornado automobile air conditioner that will be mass produced and sold on a nationwide basis through appliance-type outlets, as well as present retail channels, has been announced by The O. A. Sutton Corp.

The company also announced that a departure in style, design, and engineering brought about by comprehensive surveys for "Consumer Preferences" is reflected in all 1957 Vornado room air conditioners.

The new window-unit line includes models for use with 115-volt current. New engineering has permitted Vornado to reduce over-all size of nearly
(Concluded on Page 33, Col. 1)

SAN FRANCISCO — Local unions here are carrying out the terms of an "Interim National Agreement" between the United Association and the Sheet Metal Workers' International Association, according to Frank B. McDermott, refrigeration branch business agent for UA Local 38.

The agreement covers the unloading, handling, and installing of cooling, heating, and air conditioning units, room radiators and enclosures for heating purposes only, and kitchen equipment. It also covers mutual cooperation.

Purpose of the agreement is to "improve relations between the two organizations, eliminate work stoppages, to settle jurisdictional disputes directly between the two organizations, and mutually to assist each union to secure work coming within their recognized jurisdiction."

McDermott pointed out that "procedure is all spelled out
(Concluded on Page 31, Col. 1)

Calif. Heating Institutes' Stamp Plans Finance Ads on Proper Installation

SAN FRANCISCO — The newly-organized Warm Air Heating Institute of Northern California has started an advertising campaign to educate the public and home builders on advantages of good warm air heating installations.

A "stamp plan" is used by the institute to finance its operations.

A southern California group, the Institute of Heating & Air Conditioning Industries (IHACI) in Los Angeles, has launched a similar stamp plan which is said to have "captivated high interest and a majority audience among southern California contractors."

The latter organization re-

ported recently that advertising agencies have been interviewed by a special committee appointed by the institute in a move toward completion of the first step of the program—"a first-class, all inclusive consumer level advertising campaign..."

IHACI said leaders of the program are now turning their attention to a companion plan to be known as "Certified Installations." Certified installations coupled with the stamp program "will make the ultimate consumer aware of what to look for in good heating and air conditioning and therefore create a demand for well-engineered, well-designed, and
(Concluded on Back Page, Col. 1)

BEHIND PAGE ONE . . .

Ritz Carlton Cooling

147 Tons Augment Ocean Breezes at
Atlantic City Resort Hotel..... 8

Frozen Meats

Chain Store Executive Predicts That
90% of Meat Will Be Frozen Within 10 Years... 13

Testimonials Prove Potent Sales Tool

15

Rocket Testing

Mobile Conditioner, Heater Simulate
Rocket Temperature Extremes..... 21

A Factory Serviceman's Day

Picture Story of How He Serves Customers... 22

Pictures from Dairy Exposition

26

How Contractor Can Help Builder Help Him

Many Construction Obstacles Can Be Eliminated
To Lower Cost of Air Conditioning Installations 28

Refrigerant Piping

30

Union Agreement

Text of Agreement to Minimize Jurisdictional
Disputes Between UA and Sheet Metal Workers 31

ARI Names Bours To Replace Barrett

WASHINGTON, D. C.—William A. Bours, III, assistant director of sales of the Kinetic Chemicals Div. of E. I. du Pont de Nemours & Co., has been elected to the board of directors of the Air-Conditioning & Refrigeration Institute, it is announced by Geo. S. Jones, Jr., managing director.

Bours was named to the board to replace D. P. Barrett of Davison Chemical Co., Div. of W. R. Grace & Co., whose duties within his company had moved him away from the chemical refrigerants field.

The new director is a graduate of Princeton university, and holds an M.S. from Columbia university. He has been connected with du Pont since 1941, and has held his present position with the company since 1954.

N'western Ohio RACCA Re-Forms; To Act on Code, Joint Labor Unit

TOLEDO—Seven direct members of the Refrigeration & Air Conditioning Contractors Association (National) met at the Secor hotel here recently and re-formed the local association—RACCA of Northwestern Ohio.

Officers are James S. Hausman, Hausman Steel Co., president; James A. Foley, James A. Foley, Inc., vice president; and F. I. Davison, Davison Associates, Inc., secretary-treasurer.

Another meeting was scheduled for appointment of important committees.

"The association will employ an executive secretary to coordinate the activities and do the leg work for the committees," it was reported. "Immediate action will be taken on es-

tablishing a worthwhile safety code and a local joint committee for cooperative activity with the local union will immediately get under way."

The association plans to expand its activities to include 14 counties surrounding Toledo.

M-H To Build \$500,000 Plant at Wabash, Ind.

MINNEAPOLIS—A new, half-million-dollar manufacturing facility will be constructed in Wabash, Ind. by Minneapolis-Honeywell Regulator Co., Paul B. Wishart, president, revealed recently.

The 58,000-sq. ft., one-story building will be used for the production of electronic air cleaning equipment and other specialized metal products for residential and commercial temperature control systems, Wishart said.

Honeywell recently announced its entry into this field.

Pacific Coast ASRE Groups Reschedule Meetings To Lure National Speakers

SAN FRANCISCO—To attract outstanding national speakers, the six sections of the American Society of Refrigerating Engineers on the Pacific coast have changed their by-laws so their regular meetings follow each other in orderly sequence.

It is now possible for a speaker to reach the profession on the coast in a 10-day period. This was confirmed by Tom Davenport of Pacific Scientific Co., who served as chairman of the San Francisco section in 1955.

The new meeting schedule starts at the north end of the Pacific coast.

Vancouver, B. C. section now meets the second Monday of each month.

Seattle section now meets the

Tuesday following the second Monday of each month.

Portland, Ore. section now meets the Wednesday following the second Monday of each month.

The jump is to southern California for the next meeting.

Los Angeles section meets the third Monday of each month.

Fresno, Calif. section meets the Tuesday following the third Monday of each month.

San Francisco section meets the Wednesday following the third Monday of each month.

Airtemp Names Alter Commercial, Home Unit Distributor In Chicago

CHICAGO—Officials of Airtemp Div., Chrysler Corp., and of the Harry Alter Co., Inc. are announcing that the Alter firm has been appointed Chicago area distributor for Airtemp products.

The distributorship agreement covers Airtemp's full line of commercial air conditioning, residential air conditioning and heating equipment. Room air conditioners are not included.

The appointment represents a major change in the Airtemp Chicago-area distribution pattern, it was noted. Previously city and suburbs were covered by two distributorships. One firm handled commercial cooling equipment, the other residential. Per the consolidation move, the Alter organization becomes exclusive wholesale outlet for both types of products.

"Our local retail accounts will now have a single source of supply for new equipment, service parts, and a single center where they can obtain product information and engineering guidance," observes an Airtemp sales executive.

He adds, "Centralizing or consolidating in this manner will simplify and simultaneously increase the effectiveness of our over-all Chicago operation. Dealer accounts will especially profit from Alter's many years of marketing experience. Founded in 1919, the firm has been cited frequently in national publications for its imaginative, successful merchandising programs."

Philco Div. Names Horn Advertising Manager

PHILADELPHIA—Appointment of William J. Horn as advertising manager of Philco's Appliance Div. was announced by Harold W. Schaefer, vice president and general manager of the division.

KRAMER

COIL and BAFFLE Combinations in all STOCK SIZES



TRIPLE TROUGH BAFFLES

The addition of a third trough—a unique Kramer feature—permits the use of a deeper primary trough and reduces the dripping to a minimum, making the baffle practically drip-proof.

LONG LIFE

Made of non-corrosive metal to last the life of the cooler.

EASY INSTALLATION

Baffles shipped completely assembled—takes minimum installation time.

TEMPERATURE LEVEL

For average refrigerator temperatures, 35°F and higher, normal air defrosting can be used. For temperatures between 35° and 32°F, a time clock must be used to insure positive defrost.

WRITE FOR BULLETIN CB-276-A

KRAMER TRENTON CO. • Trenton 5, N.J.

MARSH Instruments

THE SERVICEMAN LINE of Testing Gauges, Testing Thermometers, Timers, etc.

PRESSURE GAUGES and Dial Thermometers for all services. MARSH-ELECTRIMATIC, Water Regulating Valves, Solenoid Valves.

MARSH INSTRUMENT COMPANY
Sales Affiliate of Jos. P. Marsh Corporation
Dept. D, Skokie, Ill.



Right to left: John Morrill, General Manager—Don Wood, General Sales Manager—Al Wirick, Manager of Manufacturing—Clyde Ploeger, Director of Engineering—Bill Aulsebrook, Manager, Quality Control—Harley Austin, Superintendent, Production—John Downen, Service Manager—Clarence Martin, Supervisor, Order Department—Henry Preher, Chief Application Engineer

NEW TEAM IN THE COMPRESSOR LEAGUE!

There's a new big-league team in the compressor business — Bendix-Westinghouse Evansville Division.

While our parent company, Bendix-Westinghouse Automotive Air Brake Company, has been for twenty-five years the leading supplier of precision compressors to the automotive industry, our division here at Evansville, Indiana, is a brand-new entry into the commercial refrigeration and air-conditioning field.

Though new in the business, we feel we have many sound, tangible assets to offer the industry.

Our product line consists of hermetic compressors ranging in capacity from $\frac{1}{4}$ to $7\frac{1}{2}$ H.P. They're designed for low, medium, and high temperature applications, and we believe them to be unsurpassed for dependable performance.

Our manufacturing facilities are big, modern, well-staffed and well-tooled. They can handle any size order you give us.

Our personnel know the business and are dedicated to carry out our main policy . . . to provide you with the finest products and best service available. We want your business and will be

contacting you soon to show you specifically what we have to offer.

NOT IN APPLIANCE BUSINESS

Our name may lead you to believe we are also in the appliance business. Neither this division nor the parent company in Elyria, Ohio, has any connection with appliance manufacturing. We make compressors and condensing units, nothing else. Bendix-Westinghouse is a joint subsidiary of Bendix Aviation Corporation, Detroit, Michigan, and Westinghouse Air Brake Company, Wilmerding, Pennsylvania.

Bendix-Westinghouse®

EVANSVILLE DIVISION Evansville, Indiana

A Division of Bendix-Westinghouse Automotive Air Brake Company, Elyria, Ohio

For more information about products advertised on this page use Information Center, page 26.

Completely Solar Heated Commercial Building Air Conditioned Year-Round

ALBUQUERQUE, N. M. — Barclay Barnett, manager, Herlin Engineering Co. here, for mechanical contractor Albuquerque Plumbing & Heating, announces completion of "a unique application of air conditioning" at a new engineering office, designed by Bridgers & Paxton, consulting engineer, and to be used by that firm.

The streamlined structure, some 4,300 sq. ft., is believed to be the first commercial building in the world to be completely solar heated.

"It was designed by Architects Stanley & Wright, A.I.A., and is expected by many to point a practical way to construction of similar solar heated buildings, where complete year-round air conditioning is desired—even in northern sec-

tions of the country," the announcement said.

The system of solar heating consists basically of a 700-sq. ft. flat plate solar collector with water used as the heat transport medium; a 7½-ton water chiller, operating as heat pump in winter, and used for cooling in summer; a 6,000-gal. water tank for heat storage; an evaporative water cooler; two pumps for circulating water through the system; and an air distribution system for heating or cooling the building.

Floor and ceiling radiant panels and an air system for ventilation are included.

The air distribution system, a Drayer-Hanson HHV air handling unit with hot water coil will allow for use of low temperature water.

Ads To Back Agent Sales Campaign As Firm Pushes Dual-Duct Systems

NEW YORK CITY—A major campaign of selling nationally through agents, and backing the program up with advertising and publicity, has been launched by Buensod-Stacey, Inc. here.

The campaign was announced by J. W. Kreuttner, vice president of the firm, which has for 20 years been a builder and installer of commercial dual-duct air conditioning systems.

Kreuttner said the campaign would emphasize dual-duct air conditioning systems, in which forced air is carried through a building and mixed in individual "air mixing units" located in each office or room. Thermostatic settings in each space permit individual "climate" according to the occupants' requirements and personal taste.

No water is circulated through the building in the Buensod system, which handles a building's heating and cooling requirements, both winter and summer, by circulating conditioned air only, it was pointed out.

Buensod-Stacey has specialized in installations of this type and has supplied equipment to air condition, among others, the Field building in Chicago, the City-County building in Detroit, and buildings in Rockefeller Center, New York.

The company operates a research laboratory and plant in New York City and a recently expanded manufacturing plant in Charlotte, N. C.

The organization of a nationwide network of agents has made "considerable progress," according to Kreuttner.

Gibson Says Independent Distributor System 'Best'

HOLLYWOOD, Fla. — "We favor independent distributors and we're going to continue this policy."

So stated W. C. Conley, vice president in charge of Gibson sales, in addressing some 500 distributors and distributor salesmen meeting here for the national sales convention of Gibson Refrigerator Co., Div. of Hupp Corp.

"As an independent manufacturer, we believe in a policy of 'independence with independents,'" he said. "We advocate the full line, but the right to determine what constitutes the make-up of his line must remain with the individual distributor."

Conley asserted that stability, confidence, and sound operating philosophy will enable independent distributors to meet the "competitive threat" of factory-branch distribution.

"In certain areas where we can't find a suitable distributor, we will have no alternative but to cover with a factory branch, but our plans call for the continuation of our method of handling national distribution through well-established independent distributors. We're convinced it's the better way—the only way—that you and we can control our destinies."

Home Furnishings

Mart Due Jan. 7-18

CHICAGO—Record buyer attendance is expected at the International Home Furnishings Market in The Merchandise Mart, Jan. 7-18.

Excellent retail sales this fall and a highly optimistic spring outlook, point to a big market, according to W. O. Ollman, Mart general manager.

The Merchandise Mart again will provide free bus service between The Mart and loop hotels and between The Mart and the American Furniture Mart.

Showrooms throughout the building are being remodeled.

If your prospect acts like this



suggest time payments



to clinch the sale



TODAY the demand on working capital is heavy. Preferring to keep their cash and usual lines of credit intact for current operations, more and more of your prospects will want to finance their purchases of equipment. Be sure your proposals are complete by including information about buying on the nationally

popular **COMMERCIAL CREDIT PLAN**. To discover how **COMMERCIAL CREDIT'S** tailor-made Refrigeration Financing Plan can help you build prestige and close sales, call our office in your city or write **COMMERCIAL CREDIT CORPORATION**, 14 Light Street, Baltimore 2, Maryland.

COMMERCIAL CREDIT CORPORATION • A service offered through subsidiaries of Commercial Credit Company, Baltimore . . . Capital and Surplus over \$190,000,000 . . . offices in principal cities of the United States and Canada.

Philco Purchase--

(Concluded from Page 1, Col. 2)

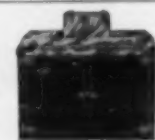
Dec. 1, Philco distributors will liquidate existing Bendix home laundry inventory of current Avco distributors throughout the country, it was reported.

Many of the engineers and merchandising personnel who have been with Bendix Home Appliances Div. for years, are expected to join Philco.

The arrangement also provides that Philco will service existing Crosley products and Bendix home appliances.

Philco also acquired all the foreign licenses of the Crosley and Bendix Home Appliances Divs. of Avco, together with patent and trade-mark rights related to such licenses.

With respect to Canada, Philco has entered into an agreement to furnish technical assistance to Moffats Ltd. of Canada, an Avco subsidiary, and to furnish products, parts and components to Moffats for the production of refrigerators, freezers, washers, and dryers.



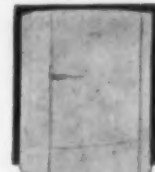
Direct Draw Refrigerated Faucets



Metal Walk-In Cooler



Cubemaker



Upright Low Temperature Freezer



Reach-In Cooler



La Crosse Self-Contained Bottle Cooler



Supreme Milk or Bottle Cooler



Bluebird Bottle Cooler—Remote



Drainboard

**EASIER SALES
FOR YOU . . .**

**THE COMPLETE
LINE FROM
LA CROSSE**

"Your welfare is ours . . .
We don't sell direct."

**WRITE TODAY FOR
COMPLETE INFORMATION**



EXPORT OFFICE: 80 BROAD ST., NEW YORK, CABLE: EXIMPORT

4 Technical Sessions Planned

Expect 800 To Attend Annual ASRE Convention In Boston Nov. 26-28

NEW YORK CITY — Some 800 delegates, guests, and other representatives of the air conditioning and refrigeration industries in the U. S. and Canada are expected to attend the 43rd semiannual meeting of the American Society of Refrigerating Engineers.

The meeting will be held Nov. 26-28 at the Statler hotel in Boston. The technical program will include four technical sessions, an air conditioning conference, a domestic refrigerator engineering conference, a conference on field installation practices and problems, and six technical forums.

CONFERENCE TOPICS

Subject of the domestic refrigerator engineering conference, set for Tuesday morning, Nov. 27, is "New Developments in Thermal Insulation for Household Refrigerators and Freezers."

The air conditioning conference on Wednesday morning will deal with "In-the-Wall Units vs. Central Systems for Apartment Houses." Consulting engineers are especially invited to attend this session.

The field installation practices and problems conference will be held Monday morning. The technical forums are scheduled for Tuesday afternoon.

TECHNICAL RESEARCH EXHIBIT

One of the major attractions of the meeting will be the Technical Research Exhibit which will present a dozen non-commercial displays of developments in air conditioning and refrigeration.

The exhibits will include the electronic refrigerator developed by RCA Laboratories, and a magnetic refrigerator, by Arthur D. Little, Inc.

SOCIAL EVENTS

The Boston host committee, under the chairmanship of Thayer Francis, Sr., is arranging entertainment and social functions. These will include square dancing, sightseeing tours of Boston's famed historical, cultural, and educational spots, and an inspection trip of the U.S.A. Quartermaster Corps Depot at Natick, Mass.

The Monday noon Welcome Luncheon will be addressed by Dr. Daniel L. Marsh, chancellor

of Boston university. His subject will be "What This Country Needs Most." An up-to-date Boston "Tea" Party, complete with cocktails, and the dinner dance will be held Tuesday evening.

Music for both will be furnished by a well-known band and there will be several professional acts and other entertainment.

Westinghouse To Unveil Refrigerated Vendors To Serve Shopping Center Customers When Stores Are Closed

E. SPRINGFIELD, Mass. — Westinghouse will unveil its "Thinner, Lower, Smarter" 1957 line of room air conditioners at a series of 43 regional distributor meetings starting Nov. 26.

H. F. Hildreth, manager of the company's Refrigeration Specialties Div., also announced that the line will include units designed by Raymond Loewy, noted industrial designer.

NEW YORK CITY—Vending machines that will dispense refrigerated and other grocery items, drugs, and other household essentials during hours when stores are closed will be given a tryout in two new multi-million-dollar shopping centers in the metropolitan area here, according to Sol G. Atlas, builder-owner.

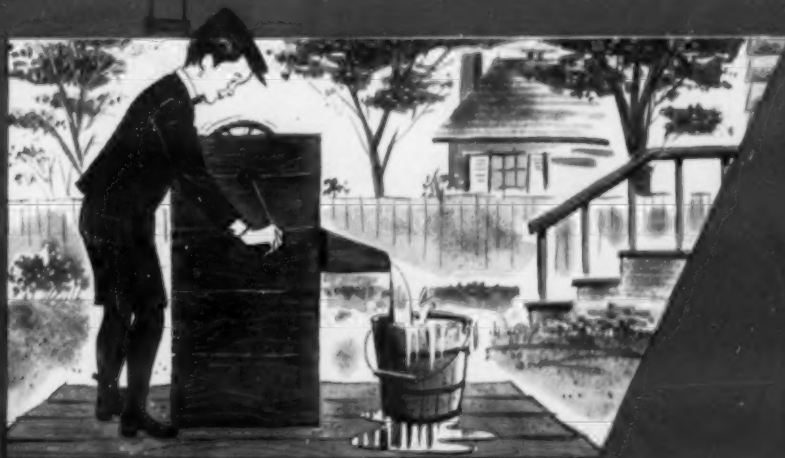
In cooperation with several vending machine manufactur-

ers, Atlas' engineers are working out design details for what may become a standard adjunct in shopping centers, it was pointed out.

It is planned to start the automatic vending operation with basic necessities. To that end a portion of the units will be refrigerated to handle such items as eggs, butter, milk, cheese, and soft drinks, it was further announced.

1906

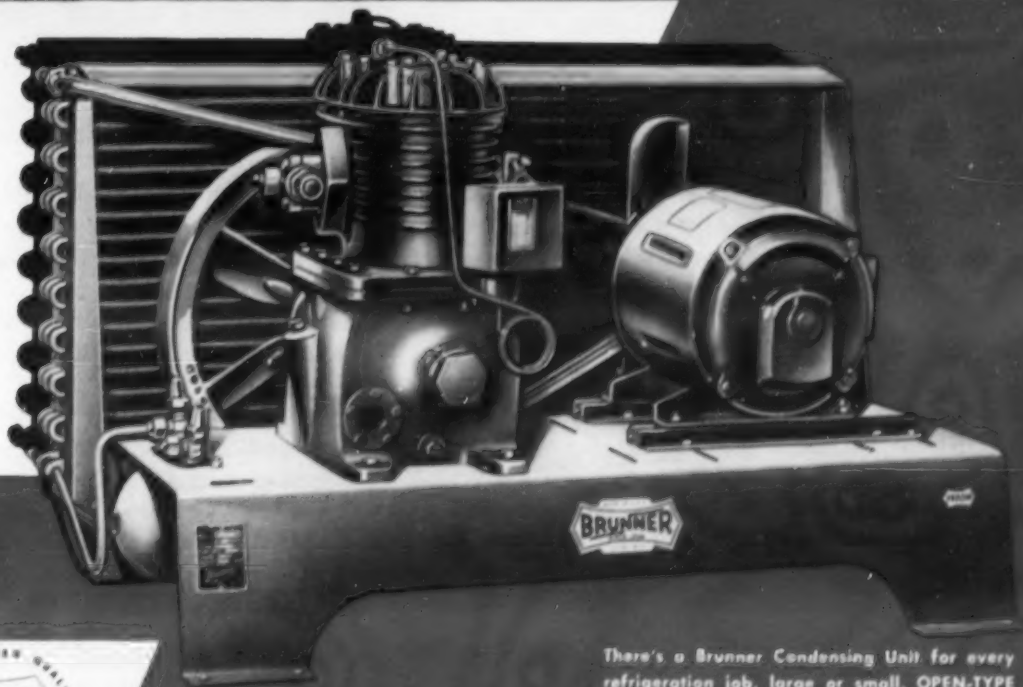
A popular engineering application at the beginning of the century... running water for the home, at a turn of the pump handle. It was in 1906 that the first Brunner-engineered product appeared.



TODAY

Draw on Brunner experience for Refrigeration Condensing Units engineered to highest performance standards.

BRUNNER MANUFACTURING COMPANY, UTICA, N.Y.
THE BRUNNER CO., GAINESVILLE, GA.
IN CANADA: BRUNNER CORP. (CANADA) LTD., TORONTO, ONTARIO



There's a Brunner Condensing Unit for every refrigeration job, large or small. OPEN-TYPE UNITS range from 1/4 H.P. through 100 H.P. BRUNNER-METIC Semi-Hermetic Units from 1/4 H.P. through 3 H.P.



IDEAL
Speed-Freeze
PRODUCTS

BEVERAGE COOLERS AND
INSTANTANEOUS DRAFT
BEER COOLERS.
(With Refrigerated Faucets)

WRITE
IDEAL COOLER CORPORATION
2953 EASTON AVE. • ST. LOUIS 6, MO.

NCRSA Convention Program --

(Concluded from Page 1)
voluntary chains and supermarket operations.

Another panel, consisting of three distributors, will tackle the question, "Does a Complete Line of Food Service Store Equipment Enhance a Distributor's Service and Profit?"

A panel of four will discuss the questions, "To Protect Your Profit . . ." what are the best ways of financing, what constitutes a good credit risk, what length of terms should be ex-

tended, and should you sell equipment on a lease basis?

"For Increased Profits—We Believe . . ." is the subject assigned to another group of three speakers.

The program also calls for talks on such topics as "Why I Patronize My Local Refrigeration Distributor," "Motivating Salesmen," "Is Your House In Order?" "Know Your Costs," and "Building Good Public Relations In Your Community."

Other convention activities

include a meeting of the Joint Industry Relations Committee and a luncheon meeting of the directors on Sunday, Dec. 2; a luncheon and a reception and annual dinner Monday; and a luncheon and a business session, including election of officers, on Tuesday.

The convention program follows:

MONDAY, DEC. 3

9:30 a.m.—Introduction of Ray Winther, special convention chairman.

Welcome to San Francisco, A. F. Tudury, president, Refrigerating & Power Specialties Co.

"How Big Are Our Bridges?" S. G. Taylor, president, NCRSA, Taylor Refrigerator Co.

"Why I Patronize My Local Refrigeration Distributor," Vincent J. Nevolo, president, Westlake Foods, Inc.

Panel: "If I Were a Distributor . . ."

"If I Were a Distributor I Would Offer Store Planning and Engineering Services to the Following Extent—" Victor Steg, regional accounts manager, C. V. Hill & Co., Inc.

"If I Were a Distributor I Would Have the Following Sales

Pricing Standards—" J. W. Krall, president, McCray Refrigerator Co., Inc.

"If I Were a Distributor I Would Organize My Service Department As Follows—" J. A. Brinkoeter, first vice president, Friedrich Refrigerators, Inc.

"If I Were a Distributor I Would Approach Voluntary Chains and Supermarket Operations as Follows—" Ray L. Greene, sales manager, Tyler Refrigeration Corp.

Question-and-Answer Period.

12:30 p.m.—Luncheon. "Motivating Salesmen," Jim Cummins, president, Market Street Van & Storage, Inc.

2 p.m.—"NCRSA—Working Together For Profits," Marie H. Lawton, executive secretary, NCRSA.

"Is Your House In Order?" Ray Winther, president, Ray Winther Co.

Panel: "Does a Complete Line of Food Service Store Equipment Enhance a Distributor's Service and Profit?"

I. W. Shell, president, Lee Shell Co.; S. W. Davis, Jr., first vice president, NCRSA, president, S. W. Davis, Jr., Inc.; H. E. Humphreys, president, H. E. Humphreys Co., Inc.

Question-and-Answer Period.

6 p.m.—Reception.

7 p.m.—Dinner. Musical presentation. Address—"How To Become a Bum In Ten Easy Lessons," Paul Speegle, columnist, *Call Bulletin*, San Francisco.

TUESDAY, DEC. 4

9:30 a.m.—"Know Your Costs," R. N. Mattingly, secretary-treasurer, Hussmann Refrigerator Co., Ltd.

Panel: "To Protect Your Profit . . ."

"To Protect Your Profit—What Are the Best Ways of Financing?" Fred E. Jacob, owner, Jacob Market Equipment, Los Angeles.

"To Protect Your Profit—What Constitutes a Good Credit Risk?" Robert L. Allen, general credit manager, D. Ghirardelli Co., Inc., San Francisco.

"To Protect Your Profit—What Length of Terms Should Be Extended?" R. Y. Mann, sales manager, C. I. T. Corp., San Francisco.

"To Protect Your Profit—Should You Sell Equipment on a Lease Basis?" D. P. Boothe, Jr., President, Boothe Leasing Corp., San Francisco.

Question-and-Answer Period.

12:30 p.m.—Luncheon. Address—"Sins of the Selling Man," A. W. McMullen, branch manager, National Cash Register Co.

2 p.m.—"For Increased Profits—We Believe . . ."

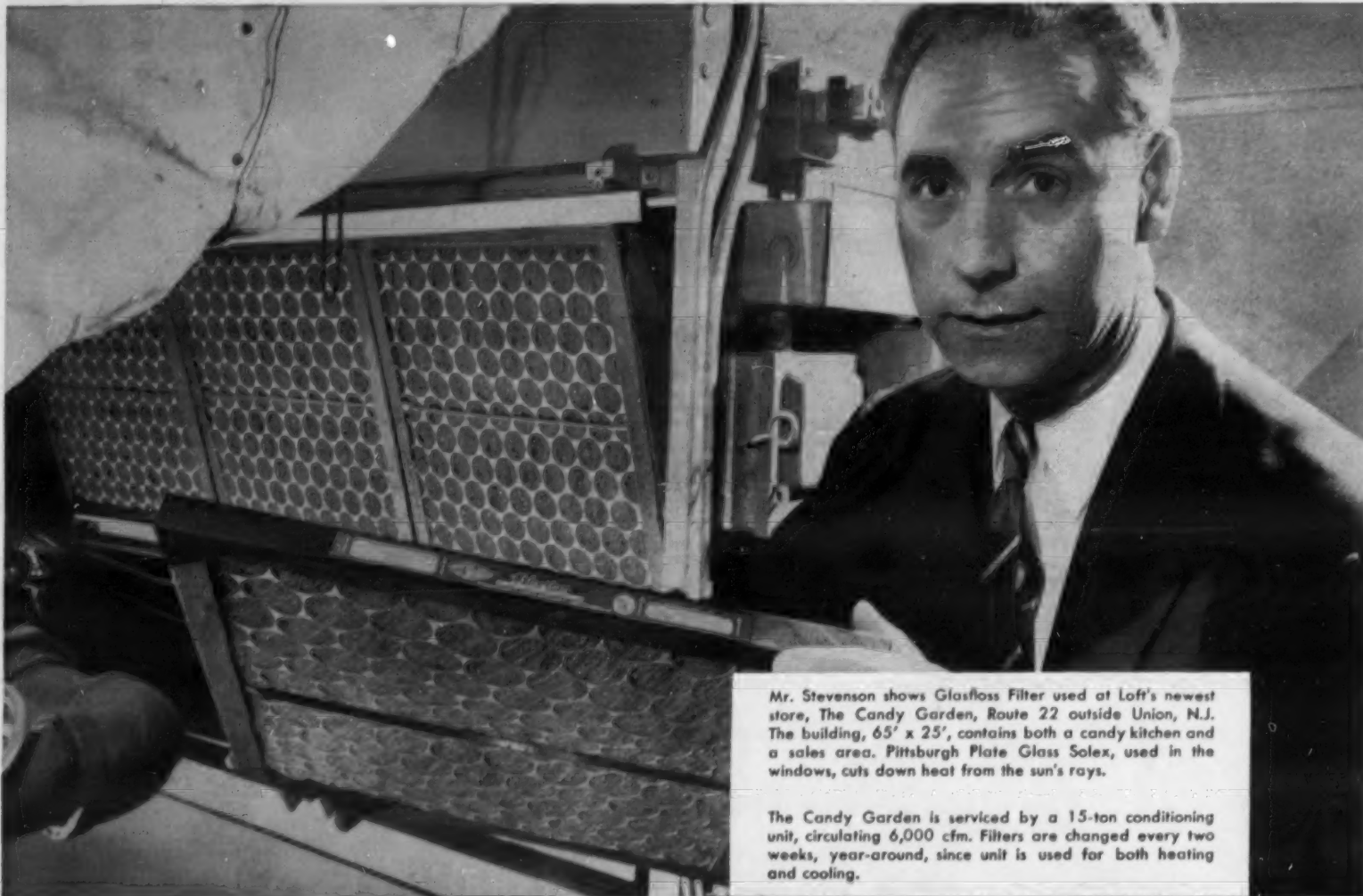
R. J. Wischusen, executive vice president, Engineering & Refrigeration, Inc.; Frank D. Stella, president, F. D. Stella Products Co.; E. V. Williams, president, Consolidated-Hill, Inc.

"Together We Work—Together We Grow" (A report on the activities and purposes of the Joint Relations Committee), George F. Wiedemer, chairman, Joint Relations Committee, president, Cable-Wiedemer, Inc.

"Building Good Public Relations In Your Community," Lorry Lokey, supervisor of press relations, western region, General Electric Co.

Elections of Officers.

New Business.



Mr. Stevenson shows Glasfloss Filter used at Loft's newest store, The Candy Garden, Route 22 outside Union, N.J. The building, 65' x 25', contains both a candy kitchen and a sales area. Pittsburgh Plate Glass Solex, used in the windows, cuts down heat from the sun's rays.

The Candy Garden is serviced by a 15-ton conditioning unit, circulating 6,000 cfm. Filters are changed every two weeks, year-around, since unit is used for both heating and cooling.

"Glasfloss Air Filters cost us less to use ... provide more efficient service"

reports Thomas Stevenson

Loft Candy Corporation's Director of Maintenance

Air conditioning and cleanliness are paramount in the business of selling candy to the public. A constant temperature of 70 degrees year-around is needed to preserve the shape, taste and appearance of freshly made chocolates; candy shop interiors must always be spotless to attract and keep customers.

In Loft Candy Corporation's 225 stores, air conditioning maintenance and air filtering have been materially improved by using Glasfloss Air Filters. Short, brittle glass fibers no longer clog air conditioner condensate lines and drains. Elaborate maintenance procedures made permanent metal filters impractical for the firm's use.

"The Glasfloss Filters can be, and often are, changed by our sales girls," Mr. Stevenson explained. "They are also

lightweight, easy to insert in the conditioning units, and long-lived because they filter in depth . . . that is, the dirt particles don't just encrust the surface. They are absorbed by the body of the filter."

There you have the important reasons why Glasfloss Air Filters are importantly different from conventional fiber glass or glass wool filters. Long, silky Glasfloss fibers are kind to the hands. Glasfloss offers less air resistance, holds more dust and dirt, doesn't surface load. In daily operations, these features mean dollars and cents saved in your office, store, plant or building. For more information, write Glasfloss Dept., Fiber Glass Division, Pittsburgh Plate Glass Co., One Gateway Center, Pittsburgh 22, Pa. Ask for a copy of Bulletin DF3.

GLASFLOSS IS A PRODUCT OF THE FIBER GLASS DIVISION OF PITTSBURGH PLATE GLASS COMPANY

Sales Offices are located in the following cities: Charlotte, Chicago, Cincinnati, Cleveland, Detroit, Houston, Los Angeles, New York, Philadelphia and St. Louis



PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

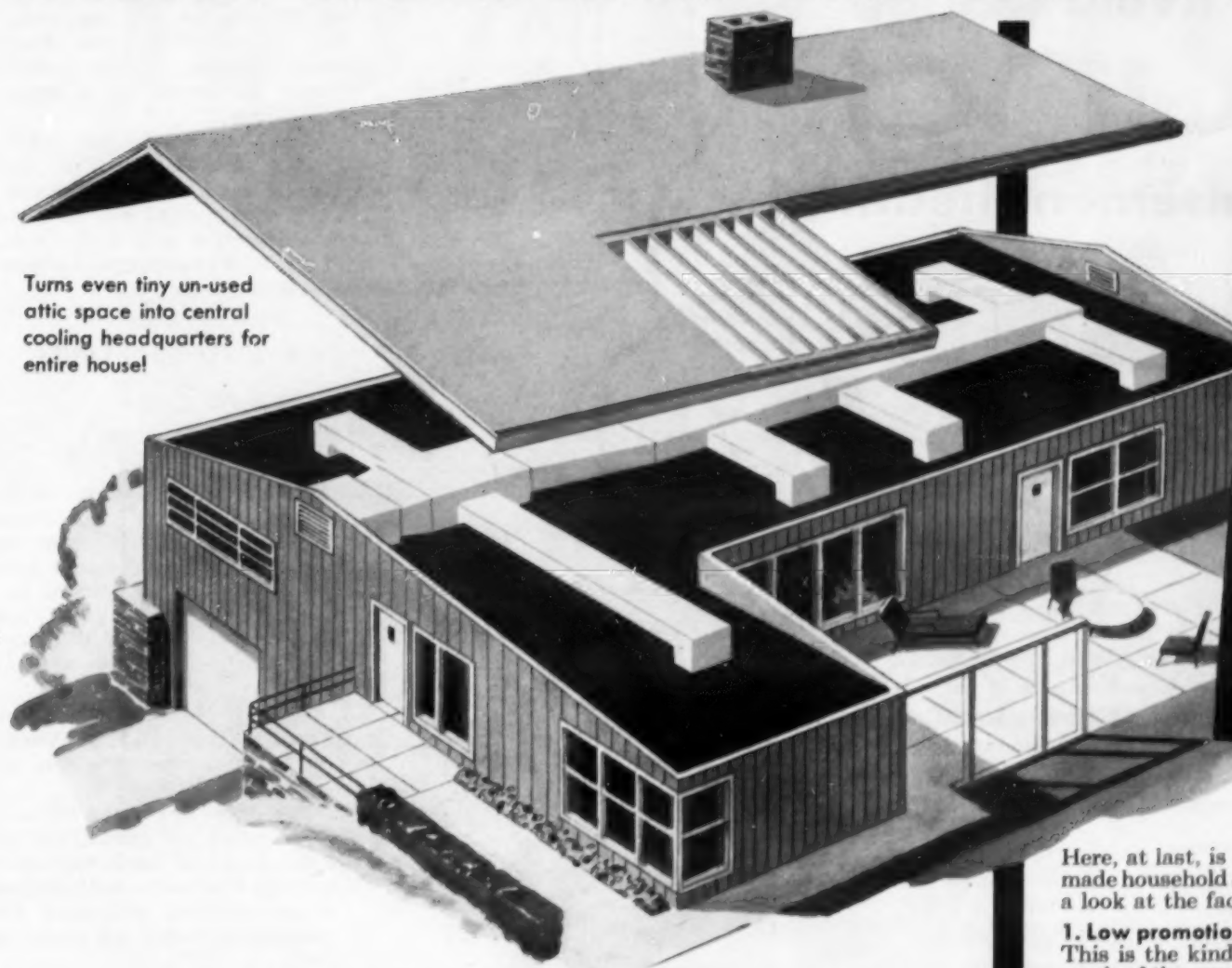
PITTSBURGH PLATE GLASS COMPANY



NEW ASSAULT ON THE SECOND FRONT

YORK ATTACKS HOME MARKET WITH CENTRAL AIR CONDITIONER THAT RETAILS AS LOW AS \$495⁹⁵

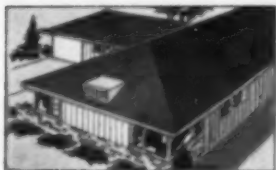
Ductwork
and
installation
extra



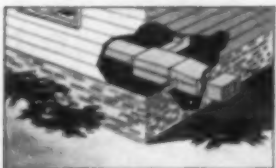
Turns even tiny un-used
attic space into central
cooling headquarters for
entire house!

YORK
AIR COOLED
PATHFINDER UNIT
with **PRE-PACKAGED**
DUCTWORK
that really puts you in
the air conditioning
business on a mass
market basis!

INSTALLS PRACTICALLY ANYWHERE!



FITS TINY SPACE. Unit
can be installed
through a dormer for
hip and low roofs.



**BASEMENT INSTALLA-
TION.** Through outer
basement wall into
crawlspace or base-
ment; thru garage or
breezeway.

DUCTWORK EASY AS A-B-C!

Flat fiberglass ducts can be cut to any
length with knife or saw. Ducts are easily
formed by simply folding on pre-scored
lines. Risers easily connected to main duct
and sealed. It's completely pre-insulated,
installation kit
included with
every unit.



Here, at last, is central air conditioning with the elements that have
made household appliances a multi-million dollar sales business. Take
a look at the factors that can bring you volume sales and profits!

1. Low promotion pricing! You can advertise a retail price under \$500.
This is the kind of pricing that puts central air-conditioning within
reach of the great medium-income group. It's the kind of pricing that
will bring people into your place of business to hear *your* air condi-
tioning story.

2. Fast, easy, low-cost installation! No plumbing, cooling towers, or
re-circulating pumps. Compact unit fits in almost any un-used space
to eliminate costly carpentry and masonry. Connects to existing
heating plant ductwork or to York's low-cost pre-fabricated duct
system that turns installation days into hours.

3. An "appliance-type" step up! Simple installation and low pricing
build traffic...give you the door opener to "step-up" luxury installa-
tions and bigger profits. You can even offer multiple installations of
York Pathfinder units for larger homes to provide selective zoned
cooling for different living areas.

And you have just as good a story for stores and offices as you do
to home-owners. York Pathfinder units are available in 1½, 2 and
3 ton models. They're backed by a 5 year protection plan. Call your
York distributor today...or write Bob Cassatt, Manager, Sales,
Commercial Division.

Your FUTURE and FORTUNE Now Lies With York!



YORK CORPORATION, YORK, PA., Subsidiary of Borg-Warner

For more information about products advertised on this page use Information Center, page 26.

14 Packaged Units Air Condition Convention Floor, 2 Dining Areas To Augment Ocean-Shore Climate In Hotel

ATLANTIC CITY, N. J.—To the "cool" tune of 147 tons of new air conditioning equipment, the Ritz-Carlton—one of Atlantic City's and the country's greatest resort hotels—has completed a move to give nature's refreshing sea breeze a supporting hand.

Augmenting the ocean-shore climate that has helped Atlantic City become the nation's most popular convention and vacation center, the hotel has "modernized with air conditioning" its Convention Floor and two main dining areas.

Work on the project began in May and guests are now enjoying the greater measure of ideal comfort provided by 14 Airtemp "packaged" air conditioners (ranging in size from 3 to 15

tons) which have a combined 147-ton cooling capacity.

Located on the second floor, the hotel's magnificent Crystal Dining Room and fashionable Ocean Terrace Room (the latter overlooks the famous Boardwalk and rolling Atlantic) have each been equipped with a duo of 11-ton "packages."

10 Self-Contained Units Serve Third Floor

The Convention Floor (3rd floor) with its several large ballrooms and private meeting rooms is served by 10, similar, self-contained units.

The new cooling equipment "represents a particularly fine example of packaged air conditioner versatility," Airtemp said. "The versatility — or the

adaptability of the widely-used units to varied floor plans and cooling needs—eliminated the necessity for extensive facility alteration and thereby cut installation time (and guest inconvenience) substantially.

Piping, Wiring, Fresh Air Ducts In Crawl Space

"Located so as to minimize loss of floor space, the new Ritz-Carlton conditioners likewise present a very streamlined appearance. Their stylish look is due in part to the fact that piping, wiring, and fresh air ducts are all concealed in crawl space underneath the floors of the newly air conditioned sections.

"Also heightening appearance, the system was designed so that areas could be comfort-zoned



ABOVE: Two 11-ton packaged air conditioners augment ocean breezes in Ritz-Carlton hotel's Ocean Terrace Room at Atlantic City, N. J.



RIGHT: Convention Floor (third) of the Ritz-Carlton is air conditioned by 10 self-contained packaged units.

how to avoid getting stung by bargain-basement heating!



No matter how you're 'pressured' to cheapen your jobs to meet a price, you're the one who's stung when dissatisfied customers complain of noisy operation, chilly floors, drafts and other symptoms of inadequate heating! Your cost for service callbacks, repairs, and corrections may even exceed your thin profit margin. And who can measure the cost of the shellacking your reputation gets from disgruntled customers?

You can avoid being stung by cheapened heating. Install quality systems, starting with Janitrol gas or oil fired conditioners. Sure, you have to ask a little more for a job that will really deliver comfort. But your prospects will gladly pay it, if you'll show how much more this quality means in healthful comfort, freedom from service and upkeep, fuel savings and longer furnace life. In the long run, Janitrol quality equipment in a properly designed system costs far less than bargain-basement heating!



To help Janitrol dealers sell better and more profitable heating, Janitrol is featuring its Crusade for Better Heating in hard-hitting ads in leading national consumer and builder magazines. Your Janitrol representative will show you how these advertisements can help you make more money while you eliminate 'heating headaches'. Call him today!

From Janitrol — a complete line of GAS and OIL warm air furnaces, AIR and WATER-COOLED summer conditioners!

Just arrived! The fabulous new JANITROL FDSC automatic year 'round air conditioner! Clean gas heating—waterless cooling. Fits in little as 3½ square feet (Model FDSC 80). Ask your Janitrol representative to tell you all about it!

...the best years of your business begin with...

Janitrol

HEATING ... COOLING

Janitrol Heating & Air Conditioning Division
Surface Combustion Corporation, Columbus 16, Ohio
In Canada: Moffatt, Ltd., Toronto 15

NEW JANITROL COUNTER-FLOW YEAR 'ROUND CONDITIONER



without the use of ductwork. Only one span of ductwork for air distribution was required—that on the Convention Floor where several smaller private rooms are served by a single conditioner."

The Philadelphia air conditioning firm of McKee and McHale handled the installation work. The system was designed in conjunction with S. S. Fretz, Jr., Inc., Philadelphia Airtemp distributor.

Two 200-Ton Units Lifted to Roof To Condition Bldg.

WICHITA, Kan.—Air conditioning units from The Trane Co., La Crosse, Wis. were recently raised to the eighth floor "penthouse" of the Fourth National Bank addition here—"the highest lift of heavy equipment in the history of this city."

Included were two 200-ton capacity Trane "CenTraVacs." The hoisting operation was insured for \$500,000.

The Trane equipment will provide heating and cooling for the seven floors of bank and office space in the bank's multi-million dollar addition, scheduled for completion during the spring of 1957.

Two 30-ton cranes with 130-ft. beams were used to hoist the equipment. The giant booms operated from the street near the bank, reducing traffic on the one-way street to a single lane.

Handy Tube Bender Smoothly Bends any pipe or Tubing 3/8"-1 1/4" O.D.



• Just a twist of the wrist assures perfect, even bends — right angle, any angle, U and offset. Save enough on ONE job to pay for your HANDY BENDER.



See your supply house—or write for free folder today.



HOLSCLAW BROS., INC.
426 N. Willow Road • Evansville, Indiana

Supermarket Group To Look at Profit Making at Miami Beach Dec. Meeting

CHICAGO—The problems of the maturing supermarket industry will receive full dress analysis at Super Market Institute's mid-year meeting, according to Joseph P. Mott, president, who revealed the program for the Dec. 5-7 meeting at the Americana hotel, Miami Beach.

Theme for the meeting will be "How to Make a Profit in a Highly Competitive Industry." The opening session will take a sharp look at the facts of new and future supermarkets.

The session that will see a presentation of "New Markets Opened in 1956" by Curt Kornblau, SMI's director of research, revealing the results of the organization's annual study of the characteristics of new markets opened in 1956.

William Applebaum, special consultant on food distribution,

Harvard Graduate School of Business, will present a picture of "What's Ahead for Super Markets," including views on what types of stores will be built in the future.

What the supermarket can learn from other distribution industries as they matured will be discussed by Malcolm P. McNair, Lincoln Filene professor of retailing, Harvard Graduate School of Business.

At the session on Thursday, Dec. 6, the who, what, where, how, and why of customer following will be probed in formal presentation and discussion. Curtis C. Rogers, executive vice president, Market Research Corp. of America, and J. Sidney Johnson, SMI's trade relations counsel, will present a definite study of buying habits.

Dr. Burleigh B. Gardner,

executive director, Social Research Inc., Chicago, consultant on consumer motivation to Jewel Tea Co. and Sears Roebuck & Co., will discuss the problem: "How to Attract the Customers You Want."

A special afternoon session is planned to provide operators with an opportunity to discuss specific operating and merchandising problems.

The concluding session on Friday will be devoted to the various problems of "Money and Men."

Paul Morrison, professor of finance, Northwestern university, and formerly assistant director, U. S. Budget, will cover "Financing Today for Tomorrow."

Following a discussion period, Leon S. Bosch, associate dean, Graduate School of Business, Northwestern university, will discuss the question: "Who's Going to Run Your Business Tomorrow?"

U. S. Accuses Memphis Group, 7 Dealers Of Conspiring To Restrain Commerce

WASHINGTON, D. C.—In a civil suit filed in U. S. District Court, Memphis, Tenn., the Justice Dept. accused the Memphis Retail Appliance Dealers Association and seven of its members of combination and conspiracy to restrain interstate commerce in violation of the Sherman Anti-Trust Act, it was reported here.

Defendants were charged with conspiring to maintain manufacturers' retail prices on appliances; to adhere to maximum limitation on trade-in allowances for used appliances; to prevent distributors from selling appliances directly to consumers; to eliminate the competition of discount houses with retailers; and to adhere to restrictive practices in advertising appliance prices.

Named as defendants, in ad-

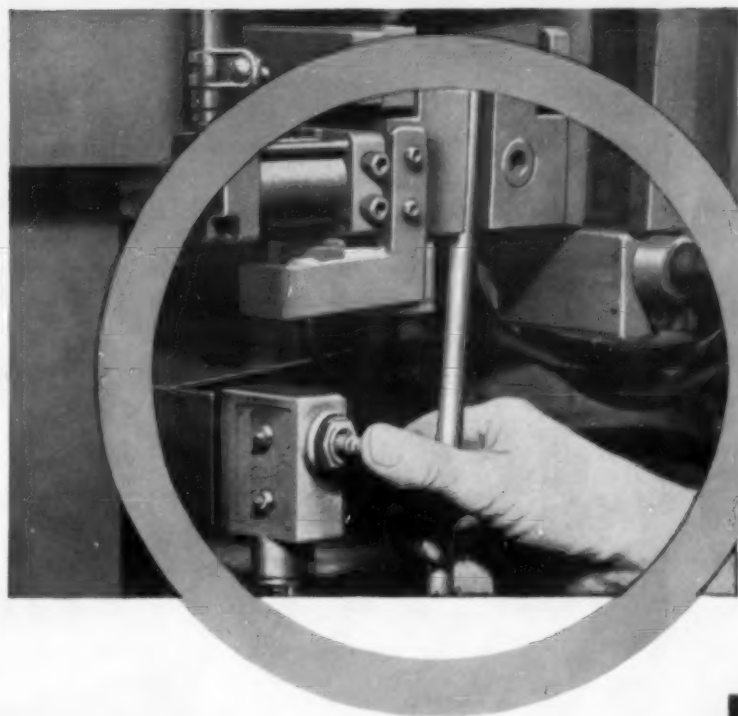
dition to the association, were:

C. D. Akers & Sons Hardware & Furniture Co., Inc.; Home Equipment Co.; Wallace Johnston Appliances Inc.; Sam Fortas House Furnishing Co., Inc.; Ace Appliance Co. and Hollis Appliance Co., both partnerships; and Ben Gruber, trading under the name Gruber Appliance Co.

Attorney General Herbert Brownell said, in commenting on the suit, that "Conspiracies aimed at maintaining resale prices and stabilizing the price structure in an industry are contrary to our concept of free enterprise."

Such conspiracies are clearly prohibited by the Sherman Act and will be prosecuted vigorously," the attorney general further commented.

100% INSPECTION OF BOHN CONNECTORS

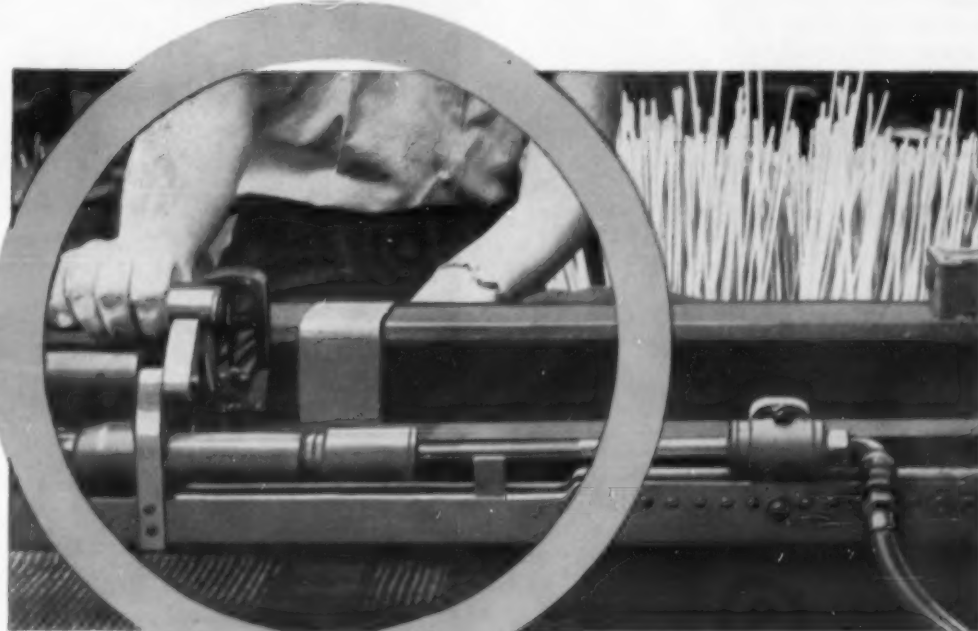


1 • FLEX TEST

Checks the strength of the flash-butt welded bond between aluminum and copper. The machine wiggles the connector in opposing directions.

2 • PRESSURE TEST

Made after the flex test. A compressed air hose is fitted on the connector. Both are lowered into a water tank and the pressure is applied. Air bubbles will reveal the most minute leaks.



Connectors—the vital link between copper and aluminum—are so important in the refrigeration system that Bohn checks everyone with *two* different tests. *Result: Bohn connectors have chalked up an amazing 99.98% perfect record in the field.* Isn't that another good reason for buying your connectors from Bohn?

CONNECTORS • TUBING • EVAPORATORS • FREEZER PLATES

BOHN

Aluminum and Brass Corporation • DETROIT 26, MICHIGAN

SALES OFFICES: Boston, Chicago, Cleveland, Dayton, Detroit, Indianapolis, Milwaukee, Minneapolis, Moline, New York, Philadelphia, Rochester, St. Louis

For more information about products advertised on this page use Information Center, page 26.



NEW VERSION of the 15-hp. packaged "Yorkaire" conditioner is designed for multi-space market.

Step-Control Packaged Conditioner Designed For Multi-Space Market

York, Pa.—A new version of the 15-hp. completely packaged Yorkaire conditioner for commercial application has been announced by R. E. Cassatt, sales manager, Commercial Div., York Corp., subsidiary of Borg-Warner Corp.

The new Yorkaire is "compact and handsomely styled in Baltic Blue with luxurious Scotch-Grain finish for installation right in the conditioned space, adding beauty and prestige to any surroundings," said Cassatt.

"The unit was designed especially for the fast-growing 'multi-space' market—shopping centers, supermarkets, hotels, and office buildings—where the simplicity of installation of high capacity packaged units offers great potential economies," he said.

This 15-hp. unit is the first of a new family of senior Yorkaires, but embodies the traditional feature of this line built into it since its introduction in 1941—multiple refrigeration systems.

Step-control is provided to match the output to the needs of the space. The individual refrigerating systems are hermetically sealed and carry the York Five Year Protection Plan "on the entire refrigerant systems, not just on the compressors alone," said Cassatt.

For those applications requiring ductwork but with low head room, the York unit has a "unique rotating fan section." Instead of the air being discharged upward, the conventional method, the fans are turned forward to throw the air directly out the front and into the front-mounted supply duct.

Ductwork can be applied in a variety of arrangements and steam or hot water heating coil and humidifier assemblies are available.

Units feature attractive casings for installation in the conditioned space, or they can be installed outside and fitted with ductwork.

To Cool Office Bldg.

LITTLE ROCK, Ark.—The Arkansas State Highway Commission has plans under way for air conditioning the Highway Office building here. The job will require a 5-ton system.

Conditioned Electronic Unit To Process Hospital Records

DETROIT—A new 12-section electronic "brain" will occupy 5,000 sq. ft. of air conditioned, humidity-controlled space here to keep track of hospital and medical records of more than 3.5 million Michigan residents, members of Michigan Hospital Service, it was recently announced.

Developed by Datamatic Corp., the brain is a large-scale general-purpose electronic data processing system known as Datamatic 1,000, it was further explained.

Cool Cab Fleet

PITTSBURGH—Peoples Cab Co. here recently announced the purchase of a new fleet of air conditioned cabs to be placed in service during the month of November.

Remote-Type Heat Pump With Supplemental Electric Heat Offered

HUNTINGTON, Ind.—A new remote-type heat pump, available in two sizes, has been announced by The Majestic Co., Inc. here.

"By means of an electric heat-pumping compressor, the ever-present heat in outside air is transferred to the inside of the house for winter heating," the company pointed out.

This same electric unit automatically changes into a summer air cooling conditioner of the "remote" type, in which the bulky operating parts are situated out-of-doors, Majestic said.

When winter temperatures drop to extreme lows, supplemental electric heat automatically comes into operation for balanced control, it was noted.

The unit was developed for basement, slab, crawl-space, or tri-level applications. Upflow, downflow, and horizontal flow are all available in compact design, according to the company.

"Two sizes are presently being manufactured: a 36,000 B.t.u. cooling with 75,000 B.t.u. heating unit, and a 60,000 B.t.u. cooling with 105,000 B.t.u. heating unit," Majestic said.

"The complete indoor unit is only 21 in. by 24 in. by 48 in. high, and includes a blower for forced-air distribution. The compressor, condenser blower, and other bulky equipment is placed outside the house in the same manner as the present-day air-cooled air conditioners.

"A special 'quiet-cote' on the unit helps to eliminate any inside or outside noise."

Majestic claims the initial cost of complete installation "should be no more than the cost of a heating system using



TALLER unit at left supplies heating or cooling inside the house by this new Majestic heat pump. Unit on the right is the remote section containing operating mechanisms.

other fuel and a good summer air conditioner. Also cost of operation compares favorably.

"In fact, if adequate insulation is properly installed, thus reducing the heating and cooling load, in many cases, the operating expense may be reduced."

Look for these labels soon!



West Penn Power Reports Room Unit 3 Install Room Air Conditioners, Sales Up 9% In First 8 Mos. over '55 Fight Eviction from Apartments

PITTSBURGH — Despite a 61% drop in room air conditioner sales during August, dealers in the territory served by the West Penn Power Co. reported sales for the first eight months to be still 9% ahead of last year.

Figures released by the utility indicated that August sales of home freezers were 33% ahead of last year, while refrigerator sales were down 11%. Dehumidifier sales were up 64% over last year.

For the same month, clothes dryer sales soared 142% over

August, 1955. Automatic washer sales were up 60%, ranges 24%, dishwashers 23%, and garbage disposers 21%. Conventional washer sales slipped by 2%.

For the first eight months of the year, dehumidifier sales were ahead of 1955 by 109%, clothes dryers by 65%, garbage disposers by 46%, automatic washers by 31%, ranges by 13%, freezers by 6%, dishwashers and conventional washers by 4%. Refrigerator sales were down 7% from 1955.

Comparative unit sales were as follows:

Appliance	Aug. '55	Aug. '56	8 Mos. '55	8 Mos. '56
Air Conditioners	301	118	1,483	1,623
Refrigerators	2,062	1,829	13,027	12,176
Freezers	393	522	2,912	3,074
Dehumidifiers	45	74	120	251
Ranges	776	961	6,412	7,223

NEW YORK CITY—Eviction proceedings in Elmhurst Municipal Court against three apartment tenants accused of installing air conditioning units in violation of their leases were continued to Nov. 21 after two of the defendants demanded jury trials.

The defendants occupy apartments owned by Queens Boulevard Garden Corp. They are Jack Silverstein, 64-34 99th St.; Saul M. Zwirn, 98-17 Queens Blvd.; and Hyman L. Fastenberg, 64-39 98th St., all in Forest Hills, N. Y. Zwirn and Fastenberg asked for jury trials.

The landlord charged that the three tenants violated their leases by installing the air conditioners, since the leases con-

tain a provision that a tenant agrees not to do anything which would increase the landlord's fire insurance rate.

The eviction proceedings were instituted after the tenants refused to remove their air conditioners as requested in a notice served following expiration of the leases last September.

Whirlpool-Seeger Names Public Relations Director

ST. JOSEPH, Mich.—Appointment of Juel M. Ranum to the new position of director of public relations for Whirlpool-Seeger Corp. was announced by Elisha Gray II, president. Ranum will continue as assistant to the president.

G-E Offers Built-In 'Thinline' Room Units In 1/2, 3/4, 1-Hp. Models

LOUISVILLE, Ky.—In addition to its "Custom," "Deluxe," and "All-Weather" 1957 "Thinline" room air conditioners, described in the Nov. 12 issue of the NEWS, General Electric Co. is also offering a Built-In Thinline room unit in 1/2, 3/4, and 1-hp. models.

The case of the Built-In Thinline is installed directly through the outside wall, and secured to studding, top and both sides, with full length angles. Of .040 in. steel, the case is Bonderized, then has two individual baked coats of specially developed paint. External aluminum louvers, backed with a mesh screen, "are relatively impervious to weather," the company said.

When construction is completed, the unit is inserted and fastened in the case. Electrical installations may be made with direct wiring within the wall or with conventional receptacle and cord arrangement.

Arabian Military Hospital, College Get 400 Room Units

CHICAGO — More than 400 Admiral Corp. room air conditioners have been installed in a new military hospital and new military college in Riyadh, capital of Saudi Arabia, it was reported here by Admiral International.

The Ministry of Defense ordered 185 units for the hospital and 140 1/4-ton and 85 1-ton room units for the college.

Admiral air conditioners also have been purchased for the royal palace in Riyadh, and 48 more are being installed in the airport terminal in Jeddah, it was stated.

Mitchell Names Livermore Assistant to General Mgr.

CHICAGO — Appointment of George Livermore as administrative assistant to E. A. Tracey, general manager of Mitchell Mfg. Co., has been announced by J. W. Alsdorf, president.

Mitchell is a wholly-owned subsidiary of Cory Corp., of which Alsdorf also is president.



G. Livermore

...on Pennsalt's new refrigerants

ISOTRON

THE KEY TO MODERN LIVING

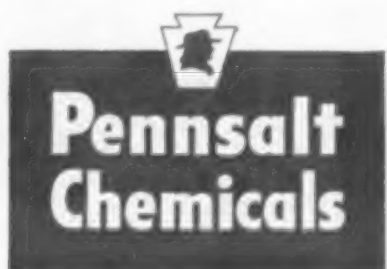
Now—even before the complete line of ISOTRON* fluorinated refrigerants is ready—Pennsalt offers the much-needed "missing link" of individualized service and assistance to the air-conditioning and refrigeration design engineer, the wholesaler, and the service contractor.

A pioneer and leader in modern fluorine chemistry, Pennsalt stands squarely behind the new ISOTRON line. ISOTRON products are COMPLETELY INTERCHANGEABLE with other reputable fluorinated refrigerants. They're of precisely the same formulas as the other products of this kind, and will be manufactured in a modern new plant with the rigid quality control

you expect of Pennsalt. ISOTRON refrigerants will be packed at the plant in all standard containers.

INVESTIGATE THE ISOTRON LINE! Benefit from Pennsalt's advanced thinking and welcome service, which will be available nationwide to refrigeration service contractors and wholesalers as well as to original-equipment manufacturers. For further information on ISOTRON refrigerants, write Isotron Chemicals Dept. 363, Industrial Division, Pennsylvania Salt Manufacturing Company, Three Penn Center Plaza, Philadelphia 2, Pa.

*ISOTRON IS A TRADEMARK OF THE PENNSYLVANIA SALT MFG. COMPANY



For more information about products advertised on this page use Information Center, page 26.

ASPIR-JET

SPRAY NOZZLES RAISE TOWER EFFICIENCY

The swirling, atomizing action of the water as it goes through the Aspir-Jet means more effective heat transfer and higher efficiency from any spray-filled cooling tower. Pressure as low as 1/2 pound gives effective water break-up and distribution. Formed of butyrate plastic, Aspir-Jets will not corrode.

Available through Refrigeration and Air Conditioning Wholesalers. Manufacturers & Refrigeration Wholesalers: if you are not now using or stocking this outstanding new product, wire or write

THERMAL AGENCY
National Sales Agents
1815 DALLAS • HOUSTON, TEXAS



Inside Dope

By GEORGE
F. TAUBENECK

(Concluded from Page 1, Col. 1)

figures of speech that you might like to publish in "Dope."

1. Quiet as a tree mouse.
2. Slower than molasses in January.
3. Going at a good hickory (good speed).
4. I guess he showed him where the bear walked through the buckwheat.
5. Cold enough to freeze the behind off a brass monkey.
6. Man he's really in high cotton (high spirits).
7. Really cuttin' the buck.
8. He's so crooked that when they bury him they will have to screw him into the ground.

Most of these came from my

home state of Michigan. Hope these are something like you are looking for.

WALTER P. NEELEY

Los Angeles 17, Calif.

Editor:

Started to jot down some figures of speech but after two pages found I was just "getting warmed up."

So, before you have to go into a special edition, thought I had better knock it off and drop these in the mail to you.

FRED RAYSER

Homely as blue mud.

Ugly as sin.

Pig in a poke.

Crazy as a loon.

Down the road a piece.

"If I had my druthers" (I'd rather...).

Knee high to a grasshopper.

T.G.I.F. (Thank God it's Friday.)

P.D.Q. (Pretty darn quick.)

As much fun as a barrel of monkeys.

Hot as a \$2 pistol.

Outen the light (turn off the light).

Proud as a peacock.

Mad as a wet hen.

So tight (stingy) he squeaks.

A diarrhea of words and a constipation of ideas.

Tickled pink.

Held a nickel so long the Indian was riding the buffalo.

So tough he chews nails and spits tacks.

Didn't know his neck from his elbow.

Head over tincups (head over heels).

Its for the birds.

Coffin nails (cigarettes).

Don't count your chickens before they're hatched.

Fickle as a weather vane.

Skeeter (resident of South Jersey).

Hit the sack (go to bed).

Saw wood (snore).

Flip your lid (lose your mind).

Totin' child (one too small to walk).

Black as the ace of spades.

Dead giveaway (obvious clue).

Deadhead (a free rider, also a stupid person).

Dead to rights (unquestionable).

Slick as a whistle.

So lucky he could fall into a sewer and come up smelling like roses.

Lies like a rug.

Doesn't know which end is up.

Sunday-go-to-meeting clothes.

Pussyfooting around.

Necktie party (hanging).

Dances like he had two left feet.

All thumbs.

All in (exhausted).

All out (using every resource).

All for it (approve).

Around Robin Hood's barn (the long way).

Crocodile tears (hypocritical sorrow).

Tongue that's loose at both ends.

Little pitchers have big ears (children hear what they are not supposed to).

Goofing off (wasting time).

Diddling the dog (wasting time).

Soldiering (not doing your share).

All wool and a yard wide.

Throw the bull.

Go by shanks mare (walk).

Hit the road (get going).

There's more than one way to skin a cat.

Hot under the collar.

Stinkin' from drinkin'.

Chip off the old block.

A face that would break a mirror.

Bats in the belfry.

Burning up the road.

Hard as nails.

Dead as a doorknob.

Governair Corp.

"Dope":

1. Snug as a bug in a rug.
2. Useless as a double row of busts on an old maid.
3. Hot as a cap pistol on fourth of July.
4. Dark as a black cat at midnight on the dark of the moon.

Sioux Falls, South Dakota
Here's one I think is good:
"As smooth as a tarantula on a piece of angel-food cake."

S. FANTLE, JR.
President

Lancaster, Pa.

Editor:

Here are so many Pennsylvania Dutch colloquialisms you'll have no "time to doppel." Chrissey's tooth ouches him. Throw Yonnie down the stairs his hat.

Pop's fixin' to get the work caught after.

It's makin' down, ain't?

Aunt Tillie sits broad.

The cookies is all but the pie is yet.

CHARLIE LOGAN

Last Gasp

Here are common phrases used almost every day by all of us.

"Thanks for nothing."

"No limits but the sky."

"Give the devil his due."

"A peck of troubles."

"Let the worst come to worst."

"A finger in every pie."

"Every dog has his day."

"A wild goose chase."

What is their origin? Shakespeare? Huh-uh. "Don Quizote."

SAVE \$10 A DAY

Take 350 lbs. upstairs

ALONE!

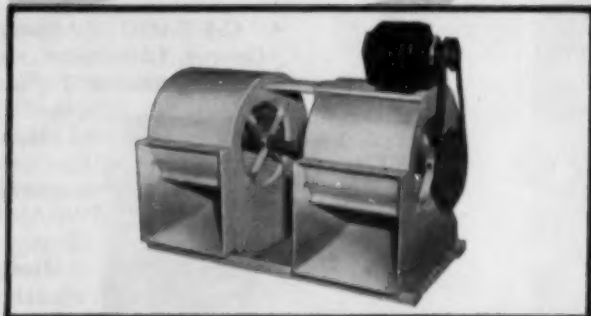
with

HYKER
WHY PAY
TWO MEN?

WALKS
UPSTAIRS
YOU DON'T
DRAG IT!

910 W. Lycoming • Phila. 40, Pa.

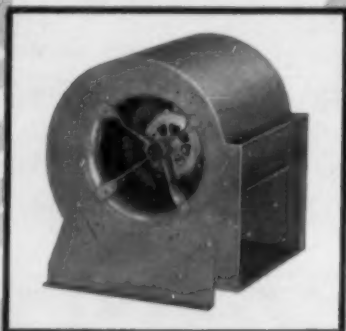
THERE'S A BRUNDAGE BLOWER FOR EVERY NEED



TWINS



DIRECT DRIVE



POWER CENTER



UNIVERSAL



SERIES 'X'

When you want to move air — reliably and efficiently — look to the Brundage Blower line. You'll find a wide range of blower types and sizes to meet your design requirements — plus 24 hour shipment on all stock models. Write for complete catalog.

BRUNDAGE BLOWERS

The BRUNDAGE Company
508 N. Park Street Kalamazoo, Mich. Phone Fireside 2-0251

Quality
since 1919

For more information about products advertised on this page use Information Center, page 26.

No Change Seen In Frozen Food Handling Under IGA's Proposed Electronics Test Expects 90% of Retail Meat To Be Frozen Within 10 Years

CHICAGO—Two different systems are under consideration by Independent Grocers Alliance for electronic vending units in a pilot test store here.

Apparently the Jacob Sluis IGA store on the campus of Illinois Institute of Technology will be the pilot store, although no specific comment on these plans was available at IGA headquarters, it was recently reported.

One of the systems under consideration, it was explained, is called Mechanized Marketing Process. In this system the homemaker checks her order on special cards. These cards are presented to a store attendant who feeds them into an electronic device which sets into play different electronic contacts to deliver all merchandise to the clerk's desk.

The second system, it was added, uses a large metal key as the electronic contact. The customer is given this key on entering the store. All merchandise is on display behind glass showcases and each item carries a code number. There is a keyboard in front of the showcase similar to the one on a jukebox.

To do her shopping, the customer first inserts the electronic key into a special slot. She then makes her selections by pressing appropriate numbers on the keyboard. The amount of each item is tabulated electronically on a tape inside the key and automatically runs a cumulative total.

It was further explained that when shopping under this second plan is completed, the housewife takes her key to the checkout clerk to pay her bill. The selected merchandise is

forwarded to the store's front by conveyor belt.

IGA officials do not regard the electronic store as a 100% food operation. Frozen foods and produce would very likely be handled as at present. The electronic system, though, would be especially convenient, officials feel, with some 200 or more staple items where personal examination, by touch, for example, is not necessary.

CHICAGO—Ten years from now 90% of all meat handled by food retailers will be frozen.

This was the opinion of H. V. McNamara, president of National Tea Co., who spoke with three other retailers in a special panel at the American Meat Institute's annual meeting recently.

Other panel members were Scott Detrick, of Scotty's Markets, Louisville, Ky.; Donald R.

Grimes, president, Independent Grocers Alliance; and Seth T. Shaw, vice president of Safeway Stores, Inc.

"Until the fish industry began packing its product frozen some years ago it didn't get anywhere," McNamara said.

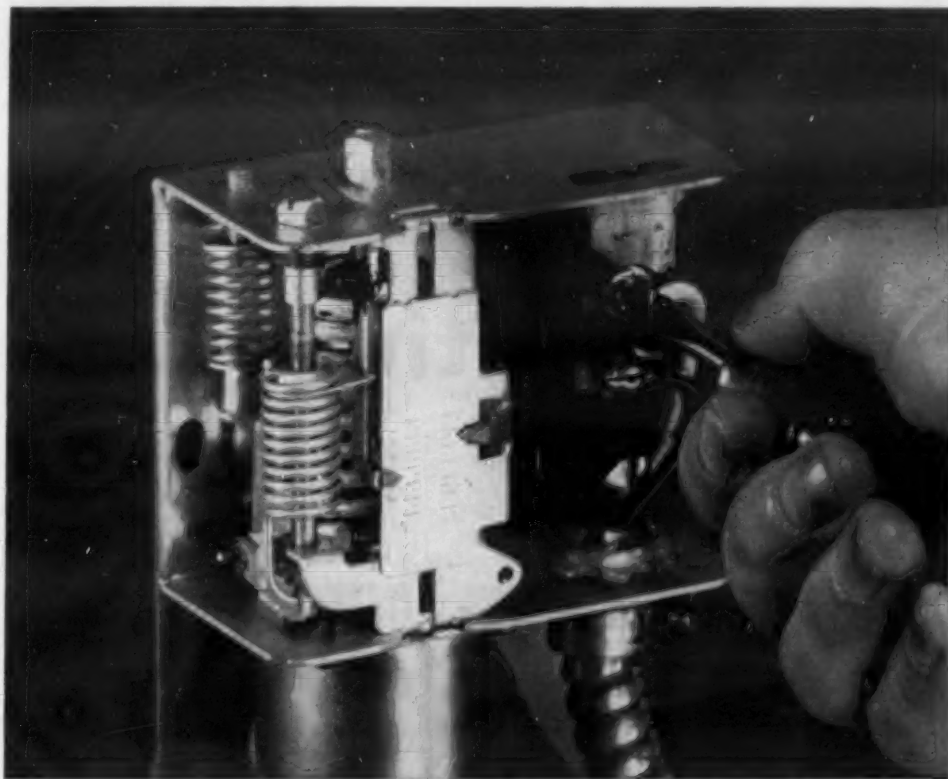
"Now 90% of fish sold retail is frozen."

"In 10 years I predict that most meat will be handled that way too."

Asked to comment on the apparent trend toward warehouse delivery of meats, Shaw stated that more retailers will be warehousing their meat.

"This is a convenient method," he said. Since the checking of weights and other handling can be done at a central place, and better utilization of cuttings also results."

McNamara added that "we think it's helpful to the packers to be able to make one delivery to a large warehouse rather than dozens of smaller deliveries to individual food stores."



Easy to install: Mount control on compressor unit or any flat surface (bracket furnished) and connect flare nut on capillary. Then, make 2 simple electrical connections; terminals are easily accessible.



Series 270: Available in single or double pole construction with or without external adjusting knob.

Tight Money May Curb Expansion Plans of Independent Markets

CHICAGO — Independent supermarket operators may have to change some of their expansion plans because of the tight money market, Ray O. Harb, Red & White national sales service manager, said here recently.

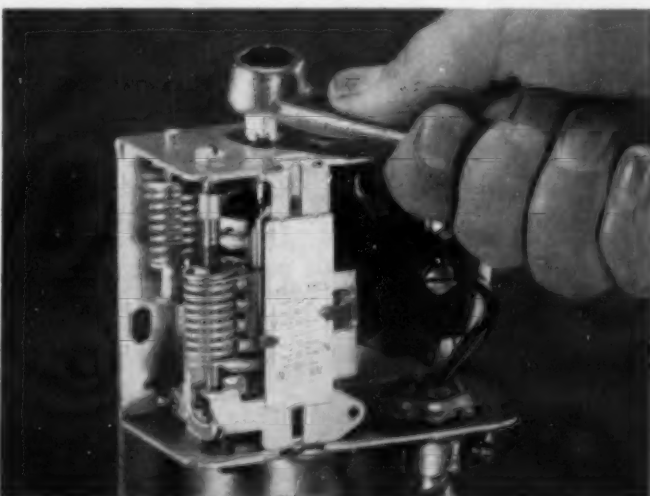
Probably the best avenue for the independents next year "will be to improve and possibly expand present stores" rather than build new units, he told a group of Red & White executives and wholesalers meeting here.

SUPER-FLO FILTER-DRIER

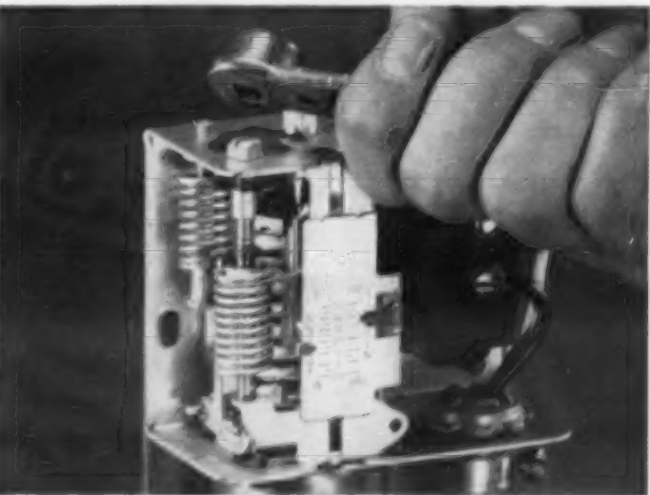
UP TO 5 TONS
NO PRESSURE DROP

**MOLDED REMCAL DRYING
FIBERGLAS DEPTH FILTERING**
Check Super-Flo's amazing low price, for both original equipment and replacement, against ordinary driers which do not have Super-Flo molded drying elements, massive fiberglass depth filters and spun-end copper shells. Available to the trade through wholesalers everywhere.

**REMCO INCORPORATED
ZELIENOPLE, PA.**



Cut-in setting: To raise or lower cut-in setting, turn cut-in screw as required . . . differential does not change.



Cut-out setting: Turn cut-out screw to raise or lower cut-out setting independently of cut-in setting. This widens or narrows differential.

PENN REFRIGERATION CONTROL IS EASIER TO INSTALL AND ADJUST

Single Pole Series 270 Combines

Simple Design With Snap-Acting Contact

Action For Long-Life Dependability

Designed with *you* in mind, the Series 270 takes all the hard work out of installation. And, adjustment is even simpler because of Penn's direct-reading, calibrated scale indicating cut-in and cut-out settings. Time-wasting subtraction or addition is eliminated.

Once installed, the Series 270 will perform longer, better, more accurately! One reason is the exclusive contact structure which provides "roll-wipe-snap" action on closing and opening. There's no bounce . . . no closing arc . . . no welding of contacts.

Try the Penn Series 270 on your next job and you'll see the great difference. Ask your wholesaler for the "270."
Penn Controls, Inc., Goshen, Indiana.

PENN AUTOMATIC CONTROLS

For Heating, Refrigeration, Air Conditioning, Gas Appliances, Pumps, Air Compressors, Engines.

1-Hp. Self-Contained Sealed Circuit Refrigerating System Powered by Variable Speed Generator Gives Truck Cooling

ATLANTIC CITY, N. J.—A self-contained sealed circuit truck refrigerating system that operates off a variable speed generator for "over the road" cooling, was exhibited at the Dairy Exposition here by the York Corp.

L. P. Gladfelter, York direct factory sales representative at the show, said York had introduced the unit "prematurely" a few years ago. Now, he said, "the bugs have been taken out" and it is being introduced to the trade again.

A 1-hp. unit, it has a capacity of 8,050 B.t.u.h. at 40° F. inside the insulated truck body and 90° F. ambient temperature at 60 cycle frequency. It is available in either 230 volts, single-phase or 220 volts, 3-phase.

Basically the unit consists of

a gas-cooled hermetic compressor, air-cooled condenser, liquid receiver, evaporator, thermal expansion valve, and electrical control box.

Control Box Holds Change-over Switch

The control box contains the necessary electrical equipment for starting, running, and protecting the hermetic compressor motor. It also holds a change-over switch for over-the-road or dock-side operation.

For underway operation, the power source consists of a 3-kw engine-driven, 220-volt, 60-cycle generator in two or three phase; voltage regulator; and an electrical junction box. This box is equipped with a green indicator light, visible from the driver's seat, that tells when the refrigerant system is in operation.

The entire condensing and evaporating system is assembled and mounted in a single angle iron frame designed for corner mounting. Total weight, including generator, voltage regulator, and unit is 280 lbs.

Control thermostat feeler bulb is mounted in the evaporator return air stream for control of unit operation. Evaporator consists of 1/2-in. staggered copper tubes expanded into corrugated aluminum plate type fins. Coil is mounted in condensate drip pan fitted with a 1/2-in. nipple and rubber drain hose.

Two 230-volt, single phase, 60-cycle fans mounted at the rear circulate the air over the coils. These fans operate independently of the rest of the refrigeration unit. They run con-



SELF-CONTAINED York hermetically sealed truck refrigeration system of improved design is observed by J. Drexler, Jr. (l.) and H. O. Bradley of Breyers Ice Cream Co., Newark, N. J. L. P. Gladfelter, direct factory sales representative for York, tells them the 1-hp. unit operates off an a.c. generator and voltage regulator that provides current at any engine speed.

tinuously if the circuit is energized.

Condenser air is supplied by two fans mounted on the rear of the unit. The system uses 4 lbs. of "Freon-22."

The company describes the generating system as "new and unique." It explained that the generator is directly connected to the truck engine by means of

a V-belt drive.

"Ordinarily," the company said, "it would not be possible to operate a hermetic compressor and evaporator and condenser fan motors from a variable speed generator because of consequent variation in electrical voltage and frequency, which at certain conditions that would obtain, would cause such motors to draw an abnormal amount of current and ultimately fail in their operation."

"However, if it were possible to control the voltage for the varying frequency developed by the generator—that is, maintain an optimum voltage level within very narrow limits of plus or minus voltage at any point of frequency—then those motors would have a constant torque and the resultant current drawn by them would be practically the same as a motor operating under design for normal voltage and frequency conditions."

Voltage Regulator Holds Optimum Level

"Now, for the first time," the company claims, "York engineers have designed and developed a refrigerating system operating with a variable speed generator, made possible through the use of a magnetic amplifier voltage regulator which maintains the generated current voltage at the optimum level regardless of variation in truck engine and generator speed and consequent current, frequency, thereby insuring safe and efficient motor performance."

The company added that the voltage regulator also supplies direct current to the field coils of the generator, eliminating the necessity for rotating equipment brushes and moving parts.

NOW for the first time....

Tecumseh

**WATER COOLED
HERMETIC CONDENSING UNITS**

10 Models - 1/2 - 3/4 - 1 - 1 1/2 - 2 H.P.



The introduction of Tecumseh water cooled hermetic units will make this the most sought after line in the dealer trade. It is the result of Tecumseh's 22 years of experience in producing over 28,000,000 compressors.

Both high and medium temperature units are supplied in each horsepower to cover a wide range of commercial applications. All models from 1/2 to 1 H.P. use externally spring mounted compressors. The 1 1/2 and 2 H.P. models use internally spring mounted compressors.

All models incorporate a continuous tube condenser and a common flat base.

Dealers now may offer either air or water cooled Tecumseh units for most commercial applications. These units represent maximum savings in cost and provide customers with the most efficient units now on the market.

Cash in on these facts by contacting your nearest Tecumseh wholesaler. Do it today!

● ECONOMY

● DEPENDABILITY

● FREEDOM FROM SERVICE

OVER 28,000,000 COMPRESSORS IN USE TODAY



The World's Largest Producer of Compressors for the Refrigeration Industry

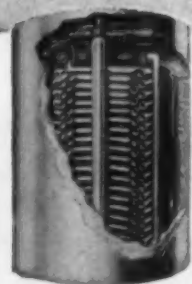
TECUMSEH PRODUCTS CO.

Marion, Ohio
Tecumseh, Michigan

EXPORT DEPT.—P. O. Box 2280, 24530 Michigan Ave., W. Dearborn, Michigan

Filtrine Since 1901

**Tank
Type
WATER
COOLERS**



- ◆ Extra-large storage
- ◆ Safety from freeze-up
- ◆ Fast hourly recovery
- ◆ 20-year life construction

Capacities: 5 to 500 g.p.h.
Storage: 2 to 240 gals.

Water coolers for all uses factory-packaged with your condensing unit. Write for literature.

FILTRINE MFG. COMPANY

216 W. PROSPECT ST. • WALDWICK, N. J.

'Testimonials' Prove Potent Sales Tool; Listing of 64 Installations Is Clincher

ST. LOUIS—A "booklet" listing 64 air conditioning installations it has made in this area has proved to be a potent sales tool for Hampton Electric Co., heating, air conditioning, and sheet metal contractor here.

Carl Muno, head of the firm's air conditioning division, pointed out that nothing is more effective in clinching a projected contract for air conditioning or refrigeration than to send the prospect around to talk to satisfied users.

For that reason, after every installation has been made, Muno asks the customer whether he minds allowing the installation to be used as a "testimonial" to efficacy of Hampton Electric's engineering methods.

CUSTOMERS USUALLY GIVE TESTIMONIALS

Only in rare instances have there been any refusals to cooperate. Thus, Muno can depend on an impressive line-up of installations which are "always open for convincing a customer."

As a quick reference to these jobs, Muno developed the printed list of 64 air conditioning installations. Each job is identified by customer name, address, and type of equipment installed.

Mrs. Arnold Named Director Of Kelvinator Institute

DETROIT—Mrs. Arleen Arnold has been named director of the Kelvinator Institute for Better Living, according to a recent announcement by H. L. Travis, vice president in charge of sales.

She succeeds Karen Fladoes who retired after 40 years in the field of home economics, the last 12 with Kelvinator.

Mrs. Arnold, formerly assistant director of the Kelvinator Institute, has a broad educational and professional background in home economics and appliance testing.

RECTORSEAL No. 2

costs
20% to 40%
less...



gives more
leak protection

No compound compares with Rectorseal No. 2 for sealing quality and price. Insoluble in all refrigerant gases, it provides positive sealing on all thread connections of refrigeration installations. It actually costs 20% to 40% less than other sealants. No other compound is so economical to use.

Rectorseal No. 2 comes in an easy-to-use tube with a nozzle tip applicator. Each tube is individually packed in a sturdy cylindrical screw top fiberboard carton that protects the tube against damage in truck or tool box.

Write today for a generous free sample of Rectorseal No. 2.

RECTORSEAL Dept. Z

2215 Commerce Street, Houston 2, Texas

RECTORSEAL
NUMBER TWO

Printed at low cost, the eight-page booklet has a cover of tough red cardboard bearing the title: "Typhoon Installations by Hampton Electric Company; Air Conditioning-Heating." Below are the firm's address and telephone number.

PROSPECT CAN VISIT INSTALLATIONS

Now, when an air conditioning prospect proves to be "on the fence," a Hampton Electric salesman gives him one of the booklets and invites the prospect to visit the firms listed for a look at typical air conditioning systems allied with his own interest.

Distributing hundreds of these handy booklets has meant scores of additional sales, Muno reports.

Philosophy of Better Living

Retailers Urged to Push Sales To Turn Users Into Customers

SAN DIEGO, Calif.—"Surveys show that if you sold 200 people a major appliance, you will find that, on the average, 40 of them will buy another major appliance this year and another 200 appliances within five years," William H. Anderson, assistant general sales manager of Frigidaire Div., General Motors Corp., said here recently in speaking of dynamic product advancement.

"An important guidepost to consider in your plan of action is turning users into customers," he told Bureau of Home Appliance members at a fall conference. "The surveys reveal that of the users who bought other appliances, a high percentage

bought from some other dealer other than the one that sold them first.

"Dissatisfaction with the product, poor service, price, or dealer attitude had little if anything to do with this," Anderson declared. "Actually, 40% of this business was lost for no other reason than neglect."

He called on retail appliance dealers and salesmen to help make people want the change in appliances by interpreting new advances in terms of a new way of life, a philosophy of better living.

"American home life has progressed through change," Anderson pointed out. But change for the sake of change is not

progress. The change must be directed toward what people want—to help them live better, more enjoyably, more economically, and more abundantly.

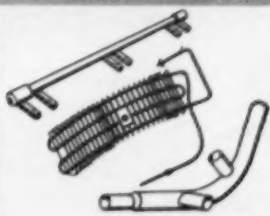
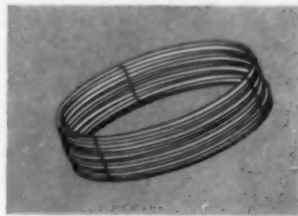
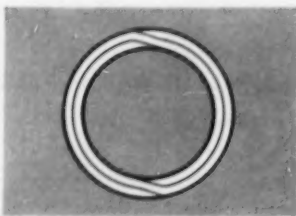
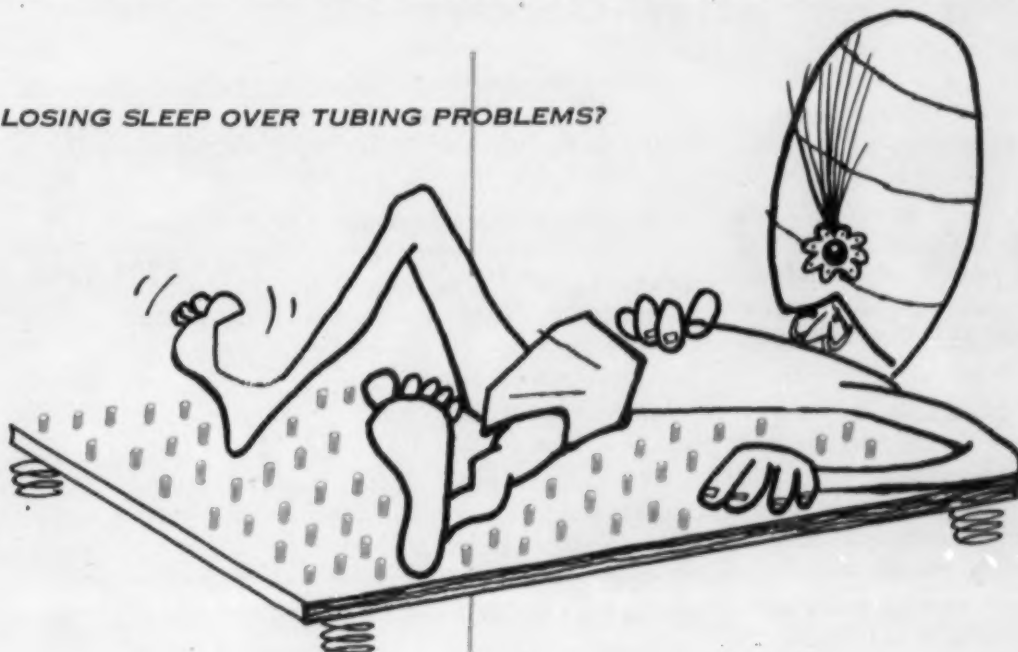
"People accept that kind of change readily, and in fact are impatient for it," he added.

Reputable dealers should "shout to the world" about the things for which they stand, Anderson emphasized, "first rate product lines, customer service, reasonable terms, fair dealing, reputation, return privileges, leniency on out-of-warranty service, post sale demonstrations, convenient hours, free parking, free trial, and so on."

Worthington Salesman P. H. Brandt Dies at 35

WHIPPANY, N. J.—Phillip H. Brandt, Jr., 35, died of cancer in Morristown Memorial hospital, Morristown. He was an air conditioning salesman for Worthington Corp.

LOSING SLEEP OVER TUBING PROBLEMS?



GM Steel Tubing is available in single wall welded, double wall brazed... in continuous 2000-ft. coils or finished and fabricated to specifications!

GET "COSTLY-METALS" PERFORMANCE . . . PLUS TYPICAL GM STEEL TUBING SAVINGS!

Why pay for more performance than you need or can possibly get? Costly metals are still being used every day in applications where rugged, dependable GM Steel Tubing does the job as well, or better, at almost half the cost.

For instance, where cleanliness counts, Rochester will guarantee you the cleanest tubing you can buy at any price! Consult Rochester Engineering. We'll be glad to consider your tubing problems and show you wherever GM Steel Tubing can help you cut costs. Just write us direct or call your Rochester Products Sales Engineer.

GM STEEL TUBING BY **ROCHESTER**

ROCHESTER
PRODUCTS
DIVISION OF
GENERAL MOTORS
CORPORATION
ROCHESTER N.Y.



They'll
Do It
Every
Time

by

Jimmy
Hatlo



Local Stumbling Blocks For Contractor-Dealers

(Concluded from Page 1)

insured loans stiffen disproportionately when air conditioning enters the picture, we are told.

On non-air conditioned homes the FHA figures a borrower's allowable total housing expense at \$10 per \$1,000 of mortgage principal, while on air conditioned homes it often is set at \$12.75 per \$1,000 of mortgage principal, or even more.

This differential in allowable expense is much greater than the most extravagant estimate of what it cost to operate and maintain an air conditioned home a dozen years ago. Obviously, government lending agency figures are sadly out-of-date.

In that connection, Chrysler's Airtemp Div. presents actual results of air conditioning operating costs in three communities in the northeast and southwest. These Chrysler figures are based on consumption of electricity in houses in which living area, site orientation, and roof and wall insulation all were the same.

Houses studied each contained 1,100 sq. ft. and faced the southwest. To assure that air conditioning equipment would be operated on a normal basis, homeowners were not advised that the survey was being made. Figures were gathered after the home cooling season had ended.

Results clearly indicate that \$100 a year is an ample allowance for operating and maintaining a central home air conditioning system in such houses. That includes electricity, water, and service charges!

In one test community, Haddensfield, N. J., 12 houses were studied. One house did not have air conditioning and served as a control unit. In a seven-month period (which included the cooling season) power usage ranged from a low of 808 kilowatts to a high of 5,158 kilowatts. Electric power usage in the non-air conditioned house was 1,248 kilowatts for the same period.

The actual cost of summer cooling in these test homes ran from \$12.34 up to \$55.30 for a three-month period, with the average cost per house being \$34.73. Power rates in this area are \$5.84 for the first 200 kilowatts and two cents per kilowatt over 200.

Doesn't the FHA need to revise its thinking? The big problem, as we understand it, is with FHA and VA offices at the local level. In some instances they have been educated

by contractor-dealers as to actual operating costs. In other cities they remain stubbornly ignorant, despite the best efforts of air conditioning dealers and contractors.

Moreover, there is another side to this picture of ability-to-pay for air conditioning. According to Harry Ward of Frigidaire, occupants of a typical air conditioned home (family of three, 90 days of cooling) enjoy these additional benefits:

Better sleeping—10¢ per night per person—90 days \$9.00.

Better appetites, less food wastage—2¢ per meal per person or 6¢ per day—90 days \$5.40.

Fewer doctor bills—15¢ per day per person—90 days \$13.50.

Smaller personal cleaning and laundry bills—5¢ per day per person—90 days \$4.50.

Better dispositions on part of family—5¢ per day per person—90 days \$4.50.

Less outside entertainment, closer relationship between members of family—\$1.93 per person per week—90 days \$25.00.

Cleaner home (less rug, furniture, and drapery cleaning)—12¢ per day—90 days \$10.80.

More energy to enjoy life—15¢ per day per person—90 days \$13.50 (surely a too-tiny estimate).

Less mileage on car used trying to escape heat—10 miles per person per week—60¢ per week—90 days \$7.80.

Family ability to go on off-season vacations, when they can take advantage of off-season rates, instead of having to vacation in the summertime in order to escape onerous heat.

According to these all-too-modest estimates of the intangibles involved, gross total amount saved for the 90-day season would be \$94.00 per person or \$282.00 per three-person family. Be that as it may:

A principal deterrent to selling air conditioned homes encountered by contractor-dealers is this ancient FHA rule-of-thumb formula for approving mortgage credit:

1. Housing expense includes:
 - (a) Principal and interest
 - (b) Insurance and taxes
 - (c) Utilities
 - (d) Maintenance

2. In lower brackets (\$400 per month) net effective income must be approximately

AN INTERNATIONAL INSTITUTION • SUBSCRIBERS ALL OVER THE WORLD

Trade Mark
U.S. Pat.
Office:
Est. 1926

AIR CONDITIONING & REFRIGERATION **NEWS**

Copyright 1956.
Business News Publishing Co.

F. M. COCKRELL, Founder

'The Conscience of the Industry'

Published Every Monday by BUSINESS NEWS PUBLISHING CO., 450 W. Fort St., Detroit 26, Mich. Telephone Woodward 2-0924. Subscription Rates: U. S. and Possessions and Canada: \$6.00 per year; 2 years, \$9.00; 3 years, \$12.00. All other countries: \$10 per year. Single copy price, 40 cents. Ten or more copies, 30 cents; 50 or more copies, 20 cents each. Send remittance with order.

EDITOR & PUBLISHER,
George F. Taubeneck

EDITORIAL DIRECTOR,
Phil B. Redeker

ASSOCIATE EDITOR,
C. Dale Mericle

ASSISTANT EDITORS:
John Sweet
Hugh Mahar
George Hanning
Robert Lacey

RESEARCH MGR., John MacLean

GEN. MGR., Warren Jones

GEN. PROD. MGR., Walter Schuler

ADV. PROD. MGR., A. M. Barrow

CIRCULATION MGR., Herbert Spencer

SUBSCRIPTION MGR., Rosalie Ashley

READER'S SERVICE MGR.,
Vincine Mogyorodi

PRESIDENT, Edward L. Henderson

ADV. MGR., Robert M. Price

WESTERN ADV. MGR.,
Allen Schildhammer

ASST. ADV. MGR., Joe Sullivan

ADVERTISING REPRESENTATIVES:
Rex Smith
William Zurkan

ADVERTISING OFFICES:
New York, 521 Fifth Ave.
Murray Hill 2-1928-9
Robert M. Price
William Zurkan
134 S. LaSalle St.
FRanklin 2-8093
Allen Schildhammer
Rex Smith
450 W. Fort St.
WWoodward 2-0924
Joe Sullivan
Los Angeles, 4710 Crenshaw Blvd.
AXminster 2-9501
Justin Hannon

Member, Audit Bureau of Circulations. Member, Associated Business Publications.

VOLUME 79, No. 12, SERIAL No. 1,444, NOVEMBER, 19, 1956

"I have always felt that whatever the Divine Providence permitted to occur I was not too proud to report. The people are not served by pussyfooting, or by that sort of journalism in which nobody will ask who is the editor of a paper or the writer of an article, and nobody will care."—Charles A. Dana.

four times the total housing above expense, or a prospective buyer will be disqualified.

3. Higher brackets (\$700 per month) net effective income must be five times the housing expense.

4. Allowable housing expense is \$10 per \$1,000 of mortgage debt (if house is not air conditioned).

5. Allowable housing expense is \$12.75 per \$1,000 of mortgage debt (if house is air conditioned).

Thus, in typical cases, the buyer of a small home is required to earn \$200-\$250 per month more income to buy a home with air conditioning than without. Such an absurd requirement precludes government-supported financing for air conditioned homes in many cities by the families which desire them.

Here's an industry educational job which needs plenty of work at the local (contractor-dealer) level—and in Washington, too.

Common to all Christians and Jews and any creature created by God is the great Commandment of Love. . . . True charity admits of no substitute. If we prostitute our love by admitting some and excluding others from our affections because they differ from us in race, religion, color, political beliefs, then we are counterfeit religionists and traitorous Americans.—BISHOP MARK K. CARROLL.

Handy Way to Subscribe

To See the Industry In Action EVERY WEEK

Keep up-to-date on what's going on in your industry. You'll see action weekly in AIR CONDITIONING & REFRIGERATION NEWS. Covers latest news and gives you top how-to-do-it reports on commercial and residential air conditioning, commercial and home refrigeration: manufacturing, contracting, distributing, retailing, and servicing. Read the Industry's newspaper for profit every week. Only \$6.00 per year, 52 issues (U.S. and Canada). Foreign: \$10.00 per year.

AIR CONDITIONING & REFRIGERATION NEWS 11-19-56
450 W. Fort St., Detroit 26, Mich.

Gentlemen: Send the NEWS every week for one year. ☐ \$6.00 enclosed
☐ Bill me ☐ Bill Company.

Name.....

Company.....

Street.....

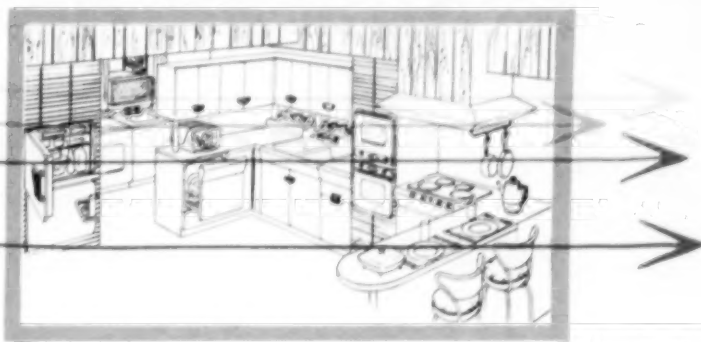
City..... Zone..... State.....

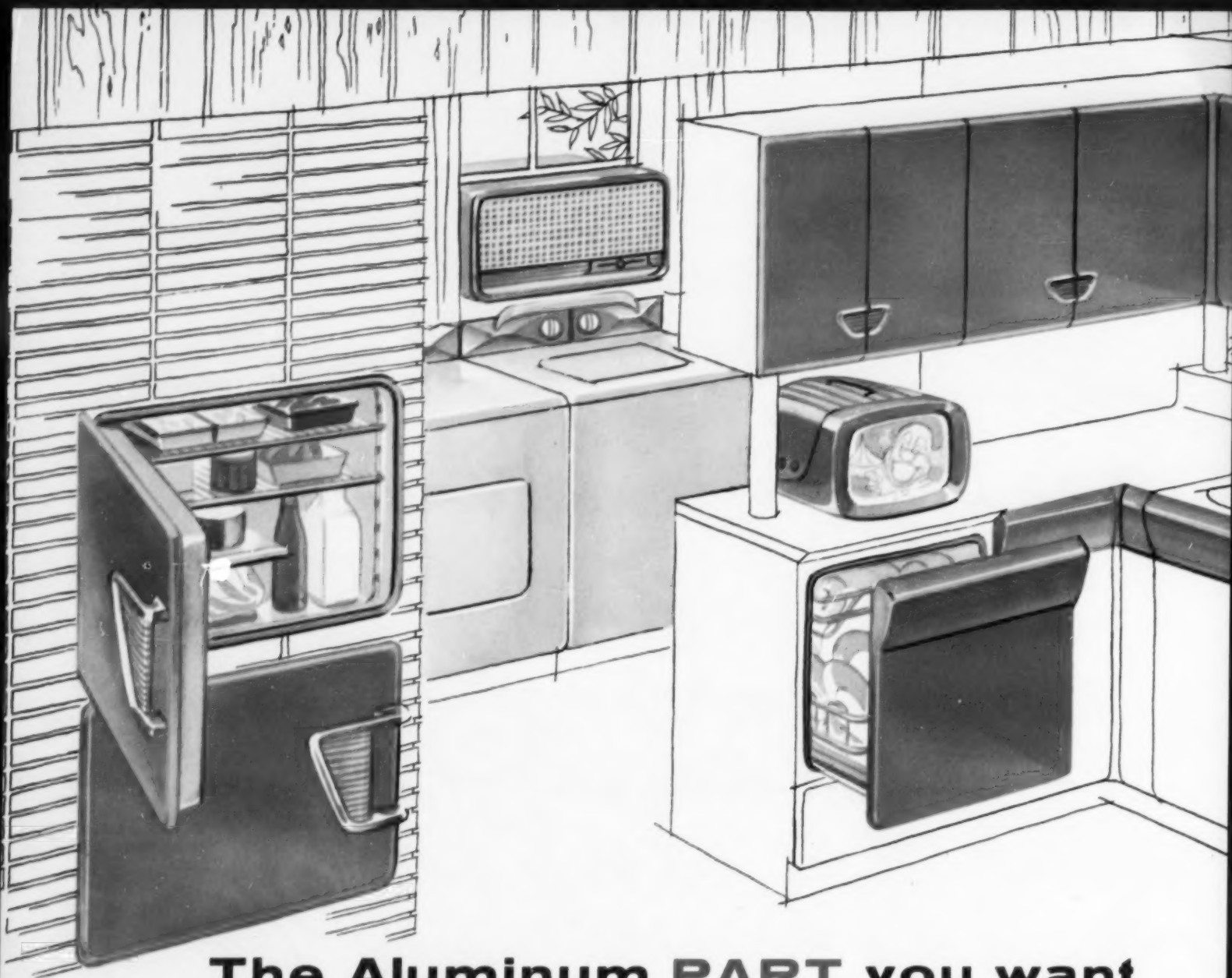
IMPORTANT: Company's Type of Business.....

**for exciting
sales appeal...**

**for the finest in-the-metal
finishes and colors on your
appliance parts**

**rely on REYNOLDS ALUMINUM
FABRICATING SERVICE**



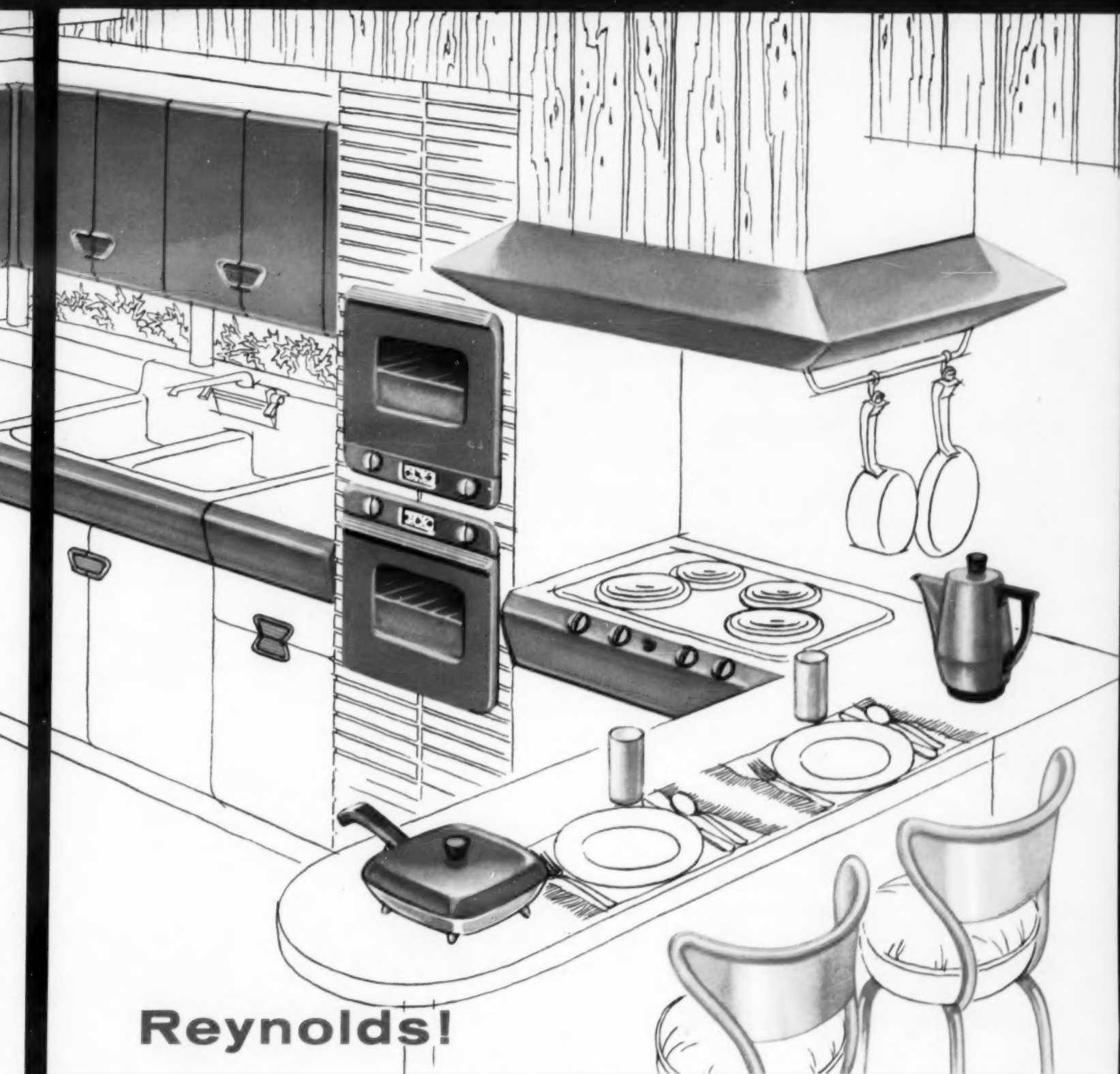


**The Aluminum PART you want
The FINISH you want
The COLOR you want
You can get them all from**

**The newest in beauty and styling is combined
with the latest in engineering in aluminum parts produced by
Reynolds for both conventional and built-in appliances.**

Rich copper colors . . . deep or pastel blues
. . . luxurious golds—or the colors of your
choice in a variety of shades and a variety
of finishes can be produced by Reynolds
Aluminum Fabricating Service to help *move*
your fine appliances.

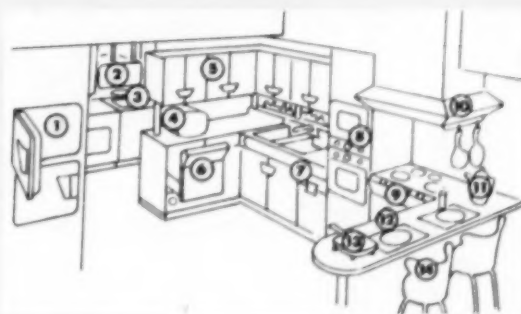
There are good reasons for relying on
Reynolds Aluminum Fabricating Service
for fabricating and finishing your aluminum
appliance parts. These reasons are spelled
out on the back page of this insert. It may
pay you well to consider them.



Reynolds!

Key to Aluminum Parts in Above Sketch

- 1 Refrigerator-Freezer Built-In Unit—copper anodized doors, gold and blue anodized interior parts
- 2 Room Cooler Cabinet Front—gold and blue anodized
- 3 Washer and Dryer—gold and blue anodized
- 4 Portable TV Cabinet—copper anodized
- 5 Kitchen Cabinet Doors—copper anodized
- 6 Dish Washer Door—copper anodized



- 7 Cabinet Trim and Drawer Fronts—copper anodized
- 8 Oven Doors for Built-In Unit—copper anodized
- 9 Control Panel for Built-In Table Top Range—copper anodized
- 10 Hood for Built-In Table Top Range—copper anodized
- 11 Coffee Maker—copper anodized
- 12 Tumblers—blue anodized
- 13 Fry Pan Cover—copper anodized
- 14 Furniture Tubing and Backs—blue anodized

NOTE: Parts shown can be fabricated by Reynolds and offered in a variety of finishes and colors.



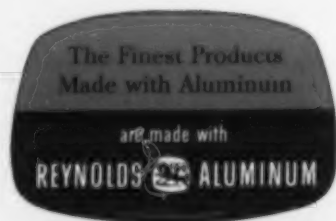
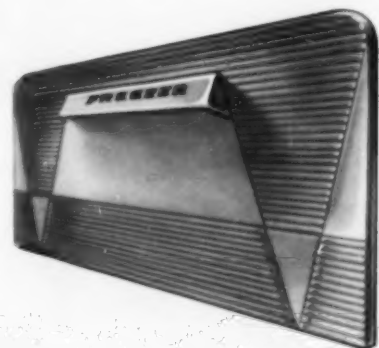
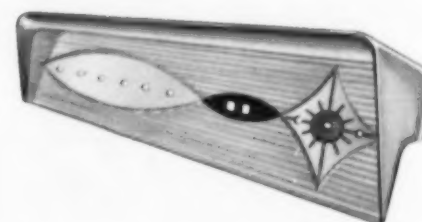
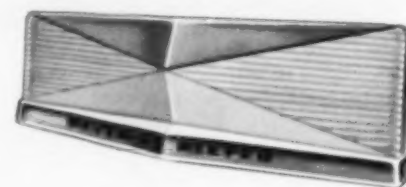
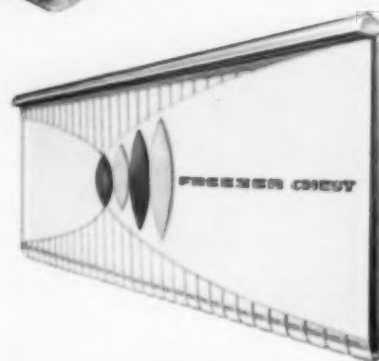
VAST FABRICATING FACILITIES, experienced design and engineering assistance and quality control from mine to finished product are three good reasons why it pays to rely on Reynolds Aluminum Fabricating Service for production of aluminum appliance parts.

And—Reynolds can supply these parts with the *finish* you want and in the *color* you want because Reynolds greatly expanded finishing facilities are unsurpassed anywhere. Reynolds tremendous investment in today's latest automatic finishing equipment assures you finer finishes on the aluminum parts you design . . . gives you new flexibility in your design thinking. And Reynolds years of technical experience with practically every finishing process and technique applicable to aluminum go hand in hand with these facilities.

- Rely on Reynolds for *color anodized* finishes in gleaming colors of your choice—in-the-metal finishes that will never pit or chip or flake or tarnish.
- Rely on Reynolds for *clear anodized* finishes with the mellow luster and the "look of sterling".
- Rely on Reynolds for many other finishes on your aluminum parts including mechanical, chemical and paint film.

For the highest quality from "start to any finish", let Reynolds fabricate and finish your aluminum parts.

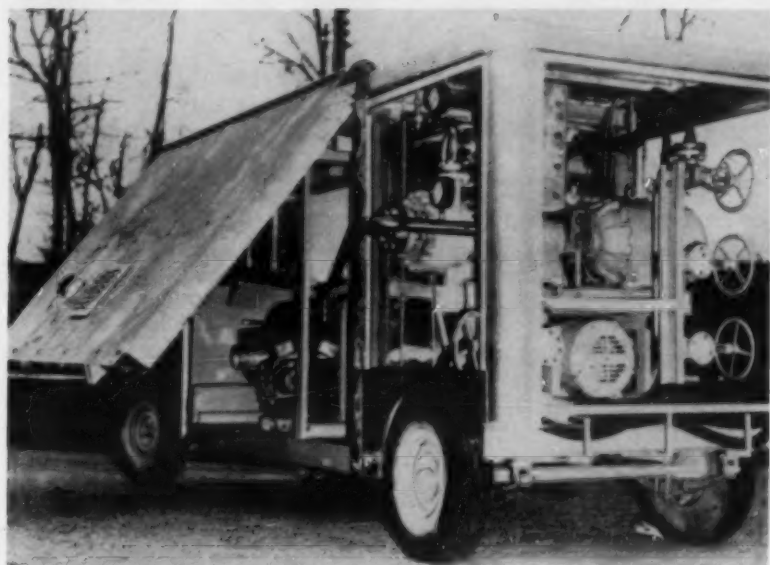
For full details on Reynolds fabricating and finishing facilities, contact your nearest Reynolds Branch Office or write *Reynolds Aluminum Fabricating Service, 2003 South Ninth Street, Louisville 1, Kentucky.*



REYNOLDS ALUMINUM FABRICATING SERVICE

BLANKING • EMBOSSING • STAMPING • DRAWING
RIVETING • FORMING • ROLL SHAPING
TUBE BENDING • WELDING • BRAZING • FINISHING

Mobile Conditioner, Heater Units Simulate Rocket Temperature Extremes



HEART of this Reaction Motors, Inc. mobile heating-cooling machine is a Dravo Corp. "Paraflo" heater mounted horizontally in the enclosed part of the trailer.

Liquid Nitrogen Cools To -175° Temperature For Missiles' Tests

DENVILLE, N. J. — Three "unique" mobile heating and air conditioning plants are playing an important role in rocket and guided missile research at the northern New Jersey development center of Reaction Motors, Inc.

Reaction Motors designed and built the portable units, which produce on-the-spot temperature extremes to simulate conditions encountered by rockets and missiles at high altitudes and supersonic speeds, it was explained.

The conditioning plants are built on four-wheel trailers so they can be moved around the 40-acre RMI center near Denville. Heart of each unit is a Dravo Corp. "Paraflo" oil-fired heater with an output capacity of 250,000 B.t.u. per hour. The heater, ordinarily used for commercial and industrial building applications, is mounted horizontally in the bottom area of the trailer.

Air forced into the heater flows over a stainless steel combustion chamber. Then it discharges from the top into a flexible tube connection that leads to an enclosure containing rocket engine parts or other components to be heated.

Some enclosures, heavily insulated, are as small as 6 cu. in. They also can be as large as 30 ft. by 15 ft. for various fabricated parts of the rocket engines.

The flexible tube connection is used instead of the two standard air discharge nozzles of the Paraflo heater.

Transfer of heat from the combustion chamber of the oil-fired heater to the air stream flowing over the stainless steel walls is instantaneous because no refractory lining is required, it was stated.

RMI engineers said the quick heating ability of the units has proved to be advantageous in the particular service for which they have been adapted. Producing high temperatures almost immediately from a "cold start" saves substantial time, they said.

To produce temperatures in the lower ranges — down to -175° — the portable conditioner employs liquid nitrogen (at -310° F.) as the coolant. Cooled

air flows through the heater in the same manner as warm air.

The standard 3,000-c.f.m. air-handling fan in the heater was replaced for this application by a separate, 2,500-c.f.m. blower. Motor of the blower is outside the heater chamber.

During the cooling cycle, the oil burner assembly is removed from the heater. This is accomplished in a matter of minutes because the "drawer-type" burner assembly is of unitized construction and slides out of the heater casing easily, it was noted.

When heating or cooling rocket engine fuel (gasoline or alcohol) and oxidizers (hydrogen-peroxide or nitric acid), the mobile conditioner is moved alongside one of the more than 200 storage tanks at RMI's plant. Supply and return lines

are connected between the storage tank and what is, in effect, a radiator assembly in the conditioner.

As liquid is pumped through the radiator, heated air circulated around the radiator by the Paraflo unit elevates the temperature, or cooled air lowers the temperature. The radiator made of stainless steel tubes and headers with copper fins, is mounted above the heater.

The conditioning unit is mounted on a 166-in. wheelbase chassis. It is housed in an aluminum enclosure 14 ft. long, 7 ft. 4 in. high, and 5 ft. 7 in. wide. Steel sheeting, insulated with 4 in. of "Foamglas" rigid cellular glass insulation material, forms the interior of the conditioners.

All motors and controls in the

conditioner are located outside the insulated chamber and are powered by 220-volt electricity from a cable that can be attached to a power line in the vicinity of the unit. The 110-volt oil burner of the heater is supplied with current through a transformer, RMI engineers explained.

Despite the unusually severe service conditions and the wide range of temperatures in which the heaters must operate, maintenance has proved to be negligible, according to John A. Redmond, in charge of RMI's Test Facilities Dept.

RMI, a pioneer in the development of liquid propellants for rockets, is engaged in classified research and production projects for the Army, Navy, and Air Force, Redmond further noted.



Plug in for Profits!



5-Ton Self-Contained Commercial Air Conditioner installs quickly in 7.73 sq. ft. of floor space.

Gibson Refrigerator Company, Greenville, Michigan

Just what the dealer ordered—a complete heating and air conditioning "package" from the source that prices right and pays the profits! From Gibson you now get just what you need—and only what you need—for your customers. All Gibson units are engineered for easy installation and minimum service. Look over the list, then see your distributor about the promotional and other helps that Gibson gives you!

Residential Air Conditioning

2 - 3 - 5 ton units
Air-cooled and water-cooled
New attic units with prefabricated ductwork
Remote air-cooled units 2 through 10 tons
Packaged water-cooled units

Commercial Air Conditioning

Packaged units 2 to 40 tons
All factory-assembled and tested
Exclusive Gibson STRAT-O-VENT air circulation

Domestic Heating

Gas and oil-fired heating units
Exclusive EVEN-FLO Vari-flame
Complete line—Hi-Boys and Lo-Boys
Year round air conditioning

Industrial Air Conditioning

Packaged direct expansion systems up to 40 tons
Packaged chillers
Water-to-air and air-to-air heat pumps

Gibson

DIVISION OF
HUPP
CORPORATION

Temperature Experts for 80 Years

How a 'Typical' Lennox Serviceman Spends His Day

Editor's Note: Presence or lack of service often makes the difference between success and failure in the air conditioning business. For that reason, Lennox Industries, Inc. puts heavy emphasis on this vital ingredient. Since the firm's service experts reportedly spend most of their time in the field, AIR CONDITIONING & REFRIGERATION NEWS is publishing this picture story.



1 John Morgan (right), Lennox Midwest Div. serviceman, gets briefed for a field trip. Don Johannsen, service manager, arranges the schedule, stressing importance of teaching so dealers will become less and less dependent on the factory serviceman.



3 On the job in Webster City, Iowa, Morgan and local installer check air temperature in and out of the condenser before installation is complete.



5 Left: Morgan arrives at Fort Dodge in the afternoon. Along with Dealer Bob Anderson and Lennox territory manager, Walt Schildknecht, standing, he checks rooftop installation of a 5-ton air-cooled condensing unit.



2 Left: Morgan loads his station wagon for a three to five-day trip with tools and equipment to meet most anticipated needs. He will receive other assignments by phone.



4 Back in dealer's office, there is a phone call from Marshalltown, Iowa headquarters and Service Manager Johannsen tells Morgan to make a swing up to South Sioux City, Neb. after he has completed his next job at Fort Dodge, Iowa.



6 Right: Local man pays close attention as Morgan checks refrigerant pressure. This job, too, was chiefly one of teaching. Morgan found this unit had too light a fuse.



7 Morgan also serviced two water-cooled units in Fort Dodge the same day. He is checking this one in the dealer's shop. Dealer had replaced the hermetic system at installation site and installed defective system in empty cabinet in his shop. Here he checks electrical input with an "Amprobe," and capacity with a draft gauge. He discovered bad starting capacitor. By repairing this unit on the spot, Morgan saved Lennox and dealer shipping costs, time, and labor.



8 Finishing the day's calls at 10:30 p.m., John Morgan and Walt Schildknecht consolidate notes. John will write a full report after returning to Marshalltown. He is to be up early next morning to get to his South Sioux City assignment, about a three-hour drive.



"For servicing hermetics profitably, Imperial gives me everything I need!"

Saves valuable shop and on-job hours on rechargeable units

Imperial hermetic servicing kits and accessories are *key equipment* in shops known for fast, guaranteed servicing on sealed hermetic units. And that includes everything needed for charging, purging and testing!

It makes a lot of sense to equip with a line that gives you many high-speed working advantages. For example, in Imperial Hermetic Service Kits, the gauge and wheel handle are always attached to the valve, ready for instant use. You'll like the fast action of Imperial Kwik-Kupler fittings on charging lines.

Imperial piercing valves tap line at any point. Tap-a-Can dispensing valve saves extra refrigerant . . . eliminates waste.



NO. 99-FT CHARGING LINE — Highly flexible. Makes extra close bends. Has Kwik-Kupler connection at both ends. One end is 45° elbow Seal gasket cannot be blown or dropped out. High burst-strength provides extra margin of safety.



NO. 189-F SERVICE VALVE KIT — Eliminates a separate valve for each hermetic unit. Valve equipped with wheel handle for easy operation. Gauge reads from 30 in. to 60 lbs., retard to 250 lbs. Contains 9 adapters, 6 wrenches, 5 gaskets, plus handy service data chart on cover.



NO. 330-C TAP-A-CAN VALVE — for dispensing canned refrigerant. Handy, positive-acting. Pierces can, and provides shut-off. For use on Charg-a-Can packaged refrigerant. Use just the refrigerant you need — save the rest for the next job.

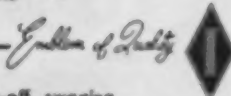
NO. 341-C PIERCING VALVE — Taps line at any point. Can be used on 4 sizes. 3/16, 1/4, 5/16 and 3/8-in O.D. tubing. Swivel anvil built into unit — cannot be dropped or lost

Ask your wholesaler for all the details on Imperial, or write direct for your free copy of Catalog 81.



THE IMPERIAL BRASS MFG. CO., 566 S. Racine, Chicago 7, Ill.
In Canada: 334 Laurier Ave., Toronto, Ontario

IMPERIAL



FITTINGS • VALVES • DRIERS • FILTERS • TOOLS FOR cutting, flaring, bending, pinch-off, swaging

How to balance air conditioning, heating and ventilating systems with the **NEW**

PUSHBUTTON

ANEMOTHERM

AIR

METER



Color-coded pushbuttons put air velocity, air temperature and static pressure at your fingertips in the new Model 60 Anemotherm Air Meter. Developed by the Anemostat Corporation of America, this versatile, accurate instrument helps you balance and check any air system. It pays for itself through time saved on only one major job.

• Write for Bulletin 55.

AC 1338A

ANEMOSTAT CORPORATION OF AMERICA
10 EAST 39th STREET, NEW YORK 16, N. Y.

First 100 Years

Australia Has Seen Huge Growth In Air Conditioning, Refrigeration After 1856 Patent for 'Produced Cold'

By W. Sprague Holden

SYDNEY, Australia—Special newspaper supplements, public observances, and other events are drawing Australians' attention to the completion of this country's first century of the science of refrigeration. In Sydney and other cities, daily papers published special sections to commemorate the milestone.

Australian "father" of refrigeration was James Harrison, a scientifically-minded resident of Geelong, which became the second largest city in the state of Victoria.

In 1856, Harrison patented a "machine for the production of cold by the evaporation of volatile liquids in vacuo"—a long way to say "refrigeration."

His device was a by-product of his work as a printer-journalist on the *Sydney Herald*. "Cold and ice making" were his hobbies. Printer Harrison noticed that type, when cleaned with the standard mixture of sulphuric ether and ammonia, became very cold.

Develops Refrigerating Compressor In 1850

That was in 1837. Harrison experimented widely. By 1850 he had developed a refrigerating compressor that produced ice. In 1851 he installed a machine in a Bendigo (Victoria) brewery.

He received letters patent for his refrigeration process on Sept. 23, 1856, established an ice works at Rodney Point, in Victoria, and enjoyed several years of prosperous business. One of his early compressors was built in London and installed there in Truman Hanbury & Co., a brewing concern.

In 1873, however, his fortunes touched both zenith and nadir within a few months. He exhibited his machine and meat frozen by it, at a public display at Melbourne, and he shipped 20 tons of frozen meat to London.

The Melbourne exhibit was a great success. But not the mutton and beef. The shipment arrived at London in an unsaleable condition and Harrison's fortunes declined precipitously. The machinery had broken down en route.

400 Frozen Meat Carcasses Shipped to England In '80

Seven years later, Thomas Sutcliffe Mort, a businessman of Sydney, and Eugene Nicolle, a Frenchman, successfully sent 400 frozen meat carcasses to England from Australia.

Until Harrison and his successors came along, Australia's commercial ice all had come from the United States. In its refrigeration centennial supplement, the *Sydney Telegraph* recalls:

"The ice came from lakes in the northern and northeastern States of the U. S. A. It was shipped to Australia in blocks, in the hulls of ships.

Modern refrigeration, as an Australian industry, began in the 1920's. The first complete refrigerator made in Australia went into use in 1928. The first

all-steel cabinet in a domestic refrigerator was put on the market in 1933.

Quick-freezing in Australia began in 1950. That year about 40 quick-freeze units were installed in Sydney. Today Australia's largest city has more than 1,000.

In the last 10 years the number of Australian manufacturers of refrigerators has grown from six companies to 16.

Says the *Sydney Morning Herald*, "Australian development usually follows American practice, where commercial refrigeration has been developed more intensely than in any other

country. Most of the major Australian manufacturers are associated with a top American refrigerator company, either as a direct branch or under licensing agreement."

Today refrigeration serves a great diversity of Australian activities.

Air conditioning has been introduced to many public buildings and to private homes. All kinds of foods are available in quick-frozen form, in the markets of Australian cities. In addition to staples familiar to American housewives, many Oriental and tropical foods are available.

Refrigeration and cold stor-

age are basic equipment at hospitals, laboratories, and pharmaceutical concerns. Frozen crawfish tails, rabbits, ice cream, and other products are shipped in refrigerated trucks and ships.

Airplanes are air conditioned. Refrigerating now plays a part in the construction of capital improvements using quantities of cement. Refrigeration is of immense importance to Australia's big banana crop. Quick-frozen foods are served on major airline flights.

Australia's primary production industries—meat packing, dairying, fishery, among others—are dependent upon refrigeration. In Western Australia's lonely outback, at the northernmost town of Wyndham, a transshipment point has been established for chilled beef flown in from slaughter houses in the Central Kimberleys. From Wyndham it is shipped to England.

In the old days, the only way to get beef to overseas markets from the dry Australian interior was to drive the cattle across hundreds of miles of semi-desert country to the nearest shipping points.

Today 400 million pounds worth of foodstuffs are stored and preserved in Australia by refrigeration.

In a nation of less than 10,000,000 population, one and three-quarter million domestic refrigerators have been purchased in 10 years by householders. Ninety-five per cent of these were made in Australia. Seventy per cent of Australian homes have refrigeration.

Production of refrigerators has grown from about 30,000 units in 1938-39 to 310,000 units in 1954, the last year for which figures are available. Value of this production has grown from one million pounds to 30 million pounds.



You get better
performance with these
Wagner DP Motors

Wagner DP motors are doubly protected by (1) rugged, corrosion-resistant cast iron frames, smoothly rounded so that no moisture can collect on them. Motor feet are cast as an integral part of the frame for maximum strength and rigidity. (2) Enclosures on the DP motor are completely drip-proof—virtually splashproof. Air intakes are located at the bottom of the endplates and air outlets are located at the base of the frame—one on each side.

Although engineered to meet the re-rated NEMA specifications which call for more power in smaller frames, the same high quality and long life performance that have made Wagner Motors "the choice of leaders in industry" for many years has of course been retained.

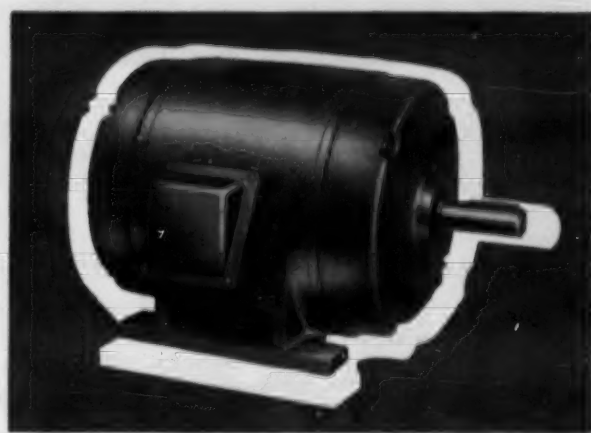
Full information and principal dimensions are given in Bulletin MU-202. Write for your copy today.



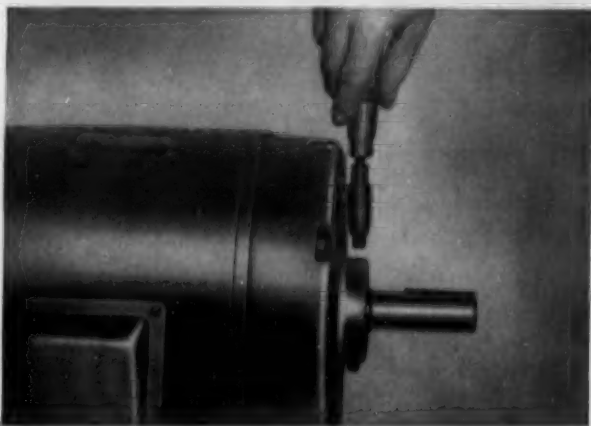
MSE-4

ELECTRIC MOTORS • TRANSFORMERS • INDUSTRIAL BRAKES • AUTOMOTIVE BRAKE SYSTEMS-AIR AND HYDRAULIC

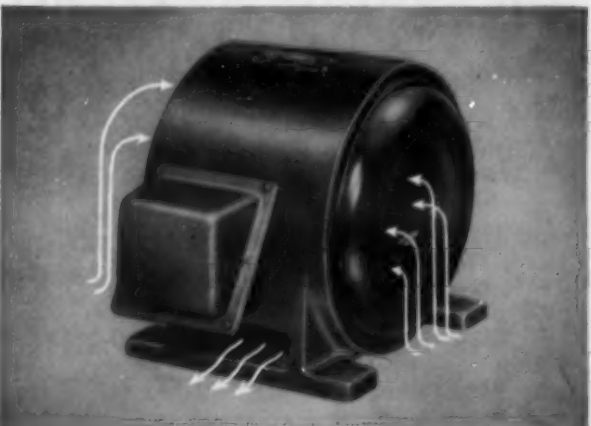
For more information about products advertised on this page use Information Center, page 26.



MORE POWER IN SMALLER FRAMES The Wagner DP Motor packs more power in a smaller frame and this smaller size means ease of handling and stocking... less space required for installation.



CAN BE RE-GREASED FOR LONGER LIFE This motor will operate for years without regreasing... bearings are completely enclosed... however, provisions have been made for adding lubricant and for the removal of old grease in cases where re-greasing is necessary.



COOL RUNNING Specially designed baffles direct cooling air from the blowers through the motor and provide protection for the stator windings. Blowers are an integral part of rotor... and move large volumes of air without noise or vibration.

Wagner Electric Corporation
6441 Plymouth Ave., St. Louis 14, Mo., U.S.A.

BRANCHES AND DISTRIBUTORS IN ALL PRINCIPAL CITIES

We're **SPECIALISTS** in

REFRIGERATION

AIR CONDITIONING

ELECTRIC MOTORS

PARTS and Supplies

WE SAVE YOU MONEY because we're specialists, with the largest selection in the world—over 10,000 items—at lowest prices. They're all illustrated, priced and described in our newest **HARRY ALTER DEPENDABOOK**—"the standard of the trade."

WHOLESALE ONLY

Write on your letterhead for the DEPENDABOOK

The HARRY ALTER CO., Inc., 1717 S. Wabash Ave., Dept. A, Chicago 16, Ill.

or visit branches

134 Lafayette Street
New York 13, N. Y.122 Parkhouse Street
Dallas 7, TexasBldg. 8, Unit 8, 600 Stewart Avenue, S. W.
Atlanta 30, Ga.**NWAHACA To Have****Dealers Solve Heating, Air Conditioning Estimate Problems In '57 Short Courses**

CLEVELAND—A series of beginning students, a combined nine college short courses on heating and cooling system for designing heating and cooling systems for residences and semi-commercial buildings will be sponsored during the first four months of 1957 by the National Warm Air Heating and Air Conditioning Association.

Dealers attending the four-day courses will work out one of three problems on estimating heating and cooling requirements and sizing ducts and will hear a series of eight lectures by specialists in various aspects of heating and air conditioning engineering.

The three problems to be worked out will cover a heating system for a small residence for

a larger residence for more advanced students, and, also for advanced students, a complex system for a semi-commercial building where the winter heat loss and summer heat and humidity gain are increased by the introduction of outside air for controlled ventilation.

The courses are scheduled to be held at the following times at:

Jan. 23-26: Penn State university, University Park, Pa.

Feb. 4-7: Washington university, St. Louis, Mo.

Feb. 18-21: Oklahoma A & M, Stillwater, Okla.

March 11-14: Purdue university, Lafayette, Ind.

March 25-28: Michigan State university, E. Lansing, Mich.

April 1-4: Long Island Technical and Agricultural Institute, Farmingdale, Long Island, N. Y.

April 15-18: University of Omaha, Omaha, Neb.

April 23-26: Syracuse university, Syracuse, N. Y.

April 29-30, May 1-2: University of Connecticut, Storrs, Conn.

Registration information can be obtained by writing to the chairman of the Warm Air Heating and Air Conditioning course at any of these colleges.

Detroit Heating Men Offered Free Course In Refrigeration

DETROIT—An offer to license heating contractors, members of the Detroit Warm Air Heating Association, to train them at no charge so they can qualify for a limited refrigeration license was made here at an association meeting recently by Carl Beltz, Star Steel Supply Co.

Beltz, a refrigeration engineer, and members of his firm, have offered to teach basic principles of refrigeration and provisions of the Detroit refrigeration code and gas and oil burner code applicable to the heating men taking out a limited refrigeration license.

The school will cover a total of five days, Beltz said. He will rent a centrally-located space for heating contractors' convenience and will hold the training periods at any mutually agreeable time, preferably from 1 to 7 p.m. on days the men can get together.

Beltz said he would have "live" demonstration equipment for training use. The only cost to contractors would be \$1 for the code book issued by the local Department of Buildings & Safety Engineering.

Under new provisions of the local codes, licensed heating contractors who can qualify for a restricted refrigeration contractors license will be permitted to install—but not service—self-contained comfort air conditioning units of not more than 7½-hp. capacity.

(Details of this code change were given in the Sept. 17 issue of AIR CONDITIONING & REFRIGERATION NEWS.)

LEADERS RELY ON LAU

25 Years Building Better Blowers

This is our Silver Anniversary Year. As in the past, Leaders Rely on Lau as the major supply source for Blowers and Parts... the best for heating and air conditioning units. You get the finest, newest developments in advanced blower engineering when you specify LAU.

FIT FOR A FLIGHT**THE LAU BLOWER COMPANY**

2000 Home Ave. • DAYTON 7, OHIO

Other plants at Kitchener, Ont., Canada, and Azusa, California

The exclusive Lau-designed and manufactured shaft has an aircraft quality finish in the journal area. Actually our two-pass centerless grinding and high-pressure burnishing of these shafts gives them a finish superior to that of some aircraft parts. This shaft, used in all Lau belt driven blowers, is built to very close dimensional tolerances for exceptionally long life, exact fit, quieter operation and maximum efficiency; permitting the use of finer lubricants. Uniform flat control is obtained by the simultaneous automatic milling of all three flats at one time. Our quality-engineered shaft is but one of the many unseen features that make Lau Blowers outstanding in performance and economy. What's your air-moving problem? Write Lau today, Dept. M.

18-2, 56

**WORLD'S LARGEST MANUFACTURERS OF AIR-CONDITIONING BLOWERS**

FHA Home Conditioning Bulletin Changes Seen

LOS ANGELES—Important changes are imminent in the Federal Housing Administration's Mechanical Engineering bulletin number 12 (ME-12) which covers FHA requirements for residential air conditioning.

This report was made by Douglas Hotes, marketing consultant, Reliable Steel Supply Co., while acting as moderator for a panel discussion on air conditioning at the regular monthly meeting of the Institute of Heating & Air Conditioning Industries.

Hotes has been in touch with Washington officials of FHA, he said.

The panel discussion was led by the chairman of the institute's FHA-VA Committee, Tom Pinatelli of Hammel Heating Co., together with Frank Bursik who is architectural reviewer for FHA, Bill Howell who is construction analyst for the Veterans' Administration, and George Wessler, Jr., of Carrier Corp.

New Airtemp Dealer Expands Operations, Moves Headquarters

ST. PETERSBURG, Fla.—Naming of St. Petersburg Fuel Oil & Heating Co. as a franchised dealer for the Airtemp air conditioning line has been announced by officials of Horne-Wilson, Inc., Airtemp distributor for northern Florida.

Along with taking on the Airtemp line, the St. Petersburg firm has also moved to new quarters at 695 31st St., S., and expanded its over-all operation.

According to owner Guy Oelze, an important expansion step has been the formation of new engineering and sheet metal departments. Two key men have likewise become associated with the firm to direct the new activities.

They are Carroll Rich, engineer, who has been active in dispensing and supervising commercial and residential cooling and heating installations in St. Petersburg for 12 years, and J. V. Ebbecka, named to head the sheet metal department.

Condition Medical Center

CHARLOTTE, N. C.—Featuring year-round air conditioning, the new Hawthorne Medical Center was opened here recently.

**AIR-CONDITIONING
MOTORS
NEVER BURN OUT**
when protected with



**MECHANICAL INDUSTRIES
PRODUCTION COMPANY**
223 ASH STREET • AKRON, OHIO

Tenants To Pay Fan Motor Electricity Charge, Control Own Year-Round Conditioning In 22-Story Apartment

NEW YORK CITY—A new 22-story, \$5,000,000 apartment building, claimed to reflect "practically every recent major advance in apartment design and tenant convenience, including central air conditioning," has been started at 10 East End Ave. by Stanley R. Broff, owner-builder.

The Trane air conditioning system will permit each tenant to regulate both cooling and heating to his own requirements all year 'round.

Chilled water in the summer and hot water in the winter will be circulated throughout the building to individual combination heating and cooling units in each room.

"The only charge to tenants will be for the small amount of

electricity used to operate the fractional horsepower motor which drives the fans in each unit," it was stated.

The central refrigerating plant in the basement, known as the Trane "CenTraVac," will be fully automatic and will service the entire building. Once it is started, it will run continuously until shut down at the end of the cooling season.

Apartment sizes will range from two to seven rooms. To meet the rising demand for larger apartments, a special group of three and four-bedroom suites will be available on the upper floors.

The kitchens, which will be larger than average, will also provide such special appointments as louvered doors, vinyl

tile floors, electric dishwashers, 10 to 13-cu. ft. refrigerators, sliding-door metal cabinets, and extensive Formica-top work surfaces.

To eliminate the usual sizeable voltage drop on the upper floors of tall apartment buildings, meter rooms will be provided every three floors instead of in the basement. A special master TV antenna system, adaptable to color reception, will also be provided, in addition to many other features.

Silver-soldered copper tubing will be used for all water lines.

According to Douglas L. Elliman & Co., Inc., renting and managing agent for the new building, monthly rentals begin at \$135 for a two-room "bachelor" unit, at \$185 for a one-

bedroom apartment, at \$250 for two bedrooms, at \$425 for a three-bedroom terrace apartment, and at \$625 for a four-bedroom terrace apartment.

Initial occupancy is scheduled for the spring of 1957. H. E. Feldman is the architect. Victor Mayper is the supervising engineer.

Firm Opens New Bldg.

NASHVILLE, Tenn.—Central Air Conditioning & Heating, Inc., engaged in the sale and service of Chrysler Airtemp products, has formally opened in its new home at Thompson lane and Kraft drive.

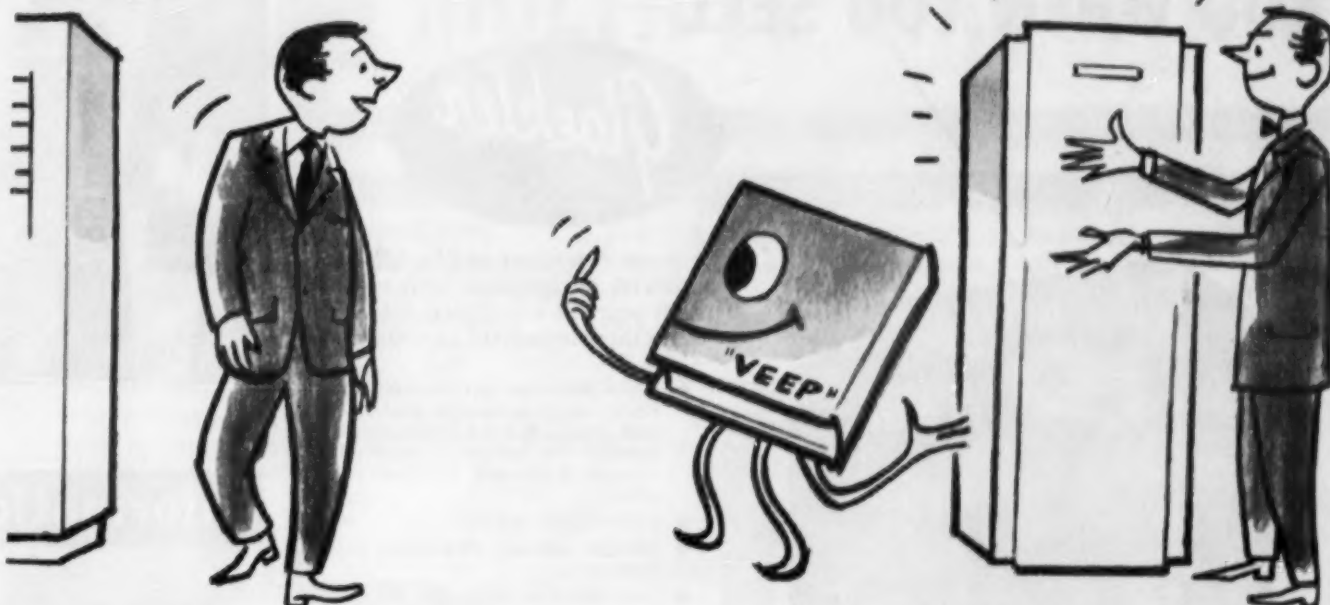
Trane Ups Yeomans

LA CROSSE, Wis.—Attorney Robert Yeomans has been elected assistant secretary of The Trane Co. and secretary of the board of directors, Trane President D. C. Minard announced recently.

Report #4

THE G-E "VEEP" IN ACTION

How new G-E "Magic Sales-Maker"—a consumer visual sales presentation, popularly called "The Veep"—helps increase sales for G-E Home Heating and Cooling Dealers



How the "VEEP" helped switch sales to me after a competitive furnace had already been bought



JACK GRODZINS,
Allstate Heating and
Sheet Metal Co., Inc.,
General Electric Dealer
Chicago, Ill.

Here's what the "Veep" did for Jack Grodzins of Allstate Heating & Sheet Metal Co., Inc., near Chicago.

While driving through a suburb Jack noticed a new home under construction. He went in to see if the heating system had been contracted. He noticed that four register openings had been roughed in—it looked as if he was too late. But on his way out

a man stopped him. He was the owner of the property. "I explained why I had stopped," Jack writes. "I asked him if he would be interested in air conditioning. He was. I suggested that, before I gave him a price on cooling, he should see his own contractor." Turned out that the owner wasn't too pleased with his

contractor's work. Jack then went through the "Veep," not only on air conditioning but also on the G-E furnace and Air-Wall® System. The owner was so impressed that he got a release from his original contract and signed with Jack for a G-E cooling unit and a G-E heating unit with Air-Wall registers.

Watch for more true sales stories like this one—in future G-E advertisements in this publication. They all teach the same lesson:—the profit-wise home heating and cooling dealer is the one who has climbed on the G-E Bandwagon. Want to join up?



FREE! Sales Secrets That You Can Use.
Exciting success stories by G-E salesmen tell how they broke sales records with the aid of the "Veep." For your copy write GENERAL ELECTRIC, HOME HEATING AND COOLING DEPT. AC-116 TYLER, TEXAS.

Progress Is Our Most Important Product

GENERAL ELECTRIC

Home Heating and Cooling Dept., Tyler, Texas

For more information about products advertised on this page use Information Center, page 26.

What Was New At the Dairy Show In Atlantic City

Products on these two pages were shown at the recent 20th Dairy Industry Exposition in Atlantic City, N. J. Other pictures appeared in the Nov. 12 issue of the NEWS and additional pictures of new products will appear in later issues. For more data on the items please use the "Information Center" blank on this page and refer to the Key Number which accompanies each picture.



—KEY NO. F-1130—

LEFT: Posing with Ace Cabinet Co.'s new "Hi-Lo Twinette" milk and ice cream case are Edward I. Stern, (l.) vice president, and A. M. Rohr, midwest sales manager.



—KEY NO. F-1131—

ICE CREAM COMPARTMENT that opens into the driver's cab is new feature of Schnabel refrigerated retail milk truck demonstrated by Lloyd Heatherington, general sales manager of the Schnabel Co. Compressor is mounted at lower front of truck body.



—KEY NO. F-1132—

LEFT: Accepting a sample of ice cream from the Sweden "Softserver 208" that is less than 15 in. wide is Sam Tosun (l.) of Forest View Dairy, Waterbury, Conn. Charles Auerhahn, national chain accounts manager for Sweden Freezer Mfg. Co. points out that the refrigeration unit is self-contained and water-cooled.

—KEY NO. F-1133—

RIGHT: New wider, lower 150-gal. bulk milk cooler equipped with 1/2 or 3/4-hp. "drop in" refrigeration unit is shown to Harold Meeker (l.) of United Dairy, Wheeling, W. Va. by James Redcliff, Wilson Refrigeration, Inc. representative.



—KEY NO. F-1134—

LEFT: It was hard to get close to Creamery Package Co.'s stainless steel 600 g.p.m. ice cream freezer, claimed to be the largest yet offered to the industry. It has a complete new refrigeration system.

MORE FOR YOUR CUSTOMER'S MONEY and A FULL MARK-UP FOR YOU WHEN YOU SELL—

Gloekler



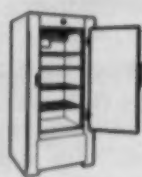
Gloekler Walk-In Cooler
Steel Clad Add-to
Construction

As a pioneer designer and builder of commercial refrigerators with more than 50 years of experience, Gloekler offers these important advantages:

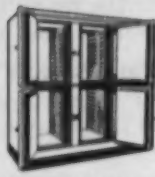
- Your customers get not only the finest in construction materials and design, but the all-important benefits the industry's most advanced skills and facilities can offer.
- Competitive pricing.
- Written warranty of efficient performance.
- As a Gloekler dealer you are protected on every transaction in your area, and get conscientious factory cooperation in maintaining good customer relations.
- Additional profit through sale of add-on features.

Yes, there's more for your customers and more for you in every Gloekler unit you sell.

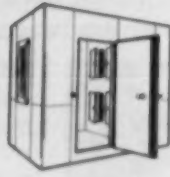
STANDARD AND CUSTOM DESIGNS FOR EVERY COMMERCIAL AND INSTITUTIONAL USE!



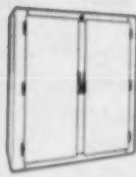
Reach-In



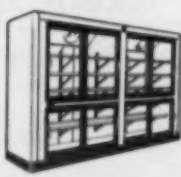
Bakery Freezer



Display Walk-In



Remote Reach-In



Wall Case

Gloekler
P.O. Box 1154-AG
ERIE, PA.

A FAMOUS NAME IN COMMERCIAL
REFRIGERATION FOR OVER 50 YEARS

Information Center

For more information on What's New products, current literature and catalogs available, equipment advertised in AIR CONDITIONING & REFRIGERATION NEWS use Key Numbers where designated or specify products advertised and we'll see that you receive this information promptly.

Products Adverted
(list name, page, and issue date)

.....
.....
.....
.....

What's New or Current Literature Available

Key No.	Key No.
Key No.	Key No.
Key No.	Key No.
Key No.	Key No.
Key No.	Key No.

Name Title
(Please Print)

Company

Street

City..... Zone..... State.....

Type of Business

MAIL THIS FORM TO
AIR CONDITIONING & REFRIGERATION NEWS
Readers Service Dept.

450 W. FORT ST.

DETROIT 26, MICHIGAN

—KEY NO. F-1135—
GATHERED AROUND AN "L" Thermobank demonstrator with a 20-ton "Unicon" in the background are Eleanor Segal, receptionist for Kramer Trenton Co., Eric A. Neilsen of Port Chester, N. Y., and Irving Cohler, Kramer representative in Chicago. Kramer has now extended the range of the Unicon to 50 tons in a single unit.



—KEY NO. F-1138—
CHECKING OVER REFRIGERATED body of new Divco retail delivery truck are Dairyman F. J. Perras of Plattsburgh, N. Y. and Walter Hall, Divco dealer in Albany, N. Y.



—KEY NO. F-1139—
LEFT: Island streamer soda fountain line that can be operated from both sides at once is demonstrated by Jim Steedman (l.) and Robert Bradley, sales representatives for the Grand Rapids Cabinet Co.



—KEY NO. F-1136—
HOME MILK BAR for large families that will hold two 3-gal. cans was introduced at the Dairy Show by Benjamin Rubin, president of Stevens-Lee Co.



—KEY NO. F-1137—
HYDRAULICALLY DRIVEN truck refrigeration unit that operates off the truck engine and weighs only 445 lbs. is new with Thermo-King Corp., asserts Jack O'Connor, eastern divisional manager for the company.

"My Typhoon District Manager helps me figure complex jobs competitively and profitably," says Steve Filippone (left), Typhoon's Jersey City dealer.



Most Profitable
FACTORY-DEALER TEAM
SET-UP IN THE BUSINESS

TYPHOON
AIR CONDITIONING

- Commercial Air Conditioners, 2 to 30 tons
 - Air Cooled or Water Cooled Condensers
 - Residential Year-Round Units
 - Packaged Heat Pumps, Residential and Commercial
- Find out how a Typhoon Direct Factory Franchise can make money for you. Send in this coupon today.

Typhoon Air Conditioning Co., Inc.
505 Carroll Street, Brooklyn 15, N. Y.
Tell me about a Typhoon Franchise in my territory. Send me bulletin A-13.

Name _____
Firm _____
Address _____
City _____ Zone _____ State _____

... SO HALSTEAD & MITCHELL ENGINEERS DESIGNED

AIR-COOLED CONDENSERS FOR SIMPLER MULTIPLE CIRCUITING

Selecting circuits and manifolding when connecting several air conditioning and refrigeration units to a single remote air-cooled condenser can be expensive unless the air-cooled condenser is designed for the simplicity that means low labor costs.

That's why it's real news that Halstead & Mitchell engineers have devised a remote air-cooled condenser especially for extra-easy multi-circuiting. As costs come down, your sales go up.

The Halstead & Mitchell Air-Cooled Condenser has been designed with several *no-cost* extras like this easier multiple circuiting. Only Halstead & Mitchell offers, for instance, "Turbu-Flo"® finned surface

which provides added heat transfer to give you *extra-safe* capacity ratings. No need to worry when you recommend H & M.

There are extra years of working life, too, for Halstead & Mitchell's superiority in cooling tower steel protection has been used to keep air-cooled condensers free from rusting. The tubing assembly is self-reinforcing, locking out vibration before it starts.

Lifetime ball bearings and deep-pitch, slow-speed fans make for quiet operation. It's the assured operation you look for when you select Halstead & Mitchell, manufacturer of the industry's broadest line of water-saving devices for air conditioning and refrigeration.

Write for Bulletin AC-100

HALSTEAD & MITCHELL • BESSEMER BLDG. • PITTSBURGH 22, PA.



HM
Halstead & Mitchell

For more information about products advertised on this page use Information Center, page 26.

Reducing Obstacles Improves Air Conditioning Job In New Residence

Contractor Works with Builder To Simplify Design Needs In Heat Pump Installation

CLEVELAND—In new home construction, there is no need to sacrifice performance, dependability, or economy in air conditioning because of construction obstacles that cannot be removed, the National Warm Air Heating & Air Condition Association indicated recently.

"The air conditioning contractor who realizes that he must serve as an advisor to the general contractor and to the architect and homeowner, can cut the number of obstacles that he must overcome and give added satisfaction to the other interested parties," the bulletin said.

By paying attention to the "little things" and by working with others, the air conditioning contractor can improve the performance and simplify the design requirements, it added.

These requirements should be taken into account even when summer cooling is to be added.

As an example of what it means, the association cites an installation designed and installed by Joe Knight of Passov Sheet Metal and Heating Co. here. In this particular installation he put in two 3-ton heat pumps to handle a large colonial-type home.

Pictures at the right illustrate some things the contractor should consider.



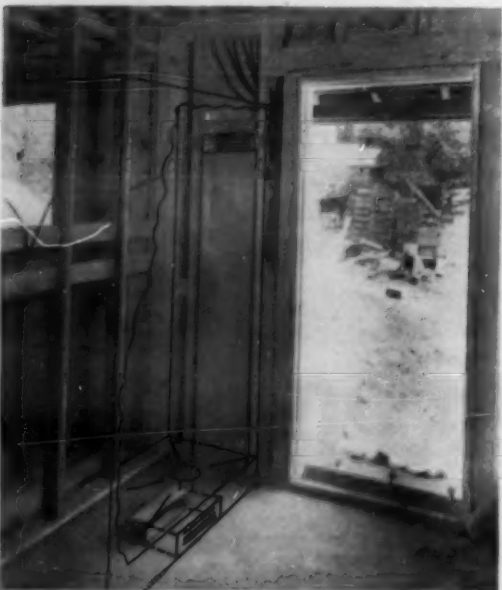
AIR CONDITIONER for large residence sits on thick cork cushion, has flexible connectors, insulating batts between unit and floor joists to cut sound transmission. Easy access slide encourages filter changing.



INSTALLER SHOWS second story wall diffuser boot with wool insulation behind boot and fire stop above—little things that add up to doing a job correctly.



CONTRACTOR advises and watches the insulating process. Reflective foil goes in all outside walls.



ENTRY WAY CLOSET, (outlined) is designed to dry and warm outdoor apparel during winter. Warm air duct into closet dries clothes. Small vent in door allows air circulation. Sheet metal pan raised off floor catches drips which are drained away. Beneath raised closet floor is supply diffuser to temper effects of opening door.



EXHAUST FAN IN kitchen is one of six vents in house to control interior heat and humidity load. Others are for bathroom showers, laundry area. They are located according to recommendations of air conditioning contractor.



EXHAUST AND SUPPLY air for the unit and air to replace the amount vented through exhaust fans will be introduced through ducts housed in small structure (outlined). It will have same exterior finish as house.

• • SALES ENGINEER

Strong engineering background in Refrigeration and Air Conditioning, to be able to effectively influence Product Design group. To contact research & development centers, aircraft mfrs. and other large potential customers, dealing with unusual and challenging problems. Salary. Up to 50% travel. Location N. Y. C.

We also have a spot for a young applications Engineer.

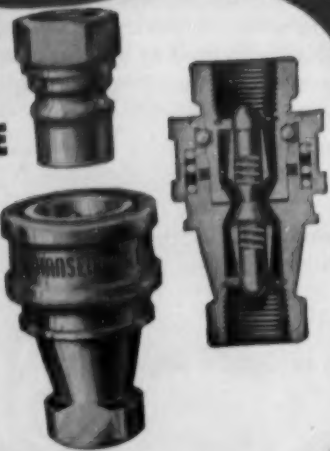
BOX 1500,
REALSERVICE ADVTG.
110 West 34th St., N.Y.C.

AIR CONDITIONING SALES ENGINEER

M.E. degree or equivalent with sales experience for nationally-known manufacturer of compressors, condensing units, water chillers and cooling towers 5 to 60 tons. Sold through manufacturers agents to contractors. Traveling required. Profit-sharing plan. Write fully as to experience, education, salary earned and desired, etc. to BOX A5668, Air Conditioning & Refrigeration News.

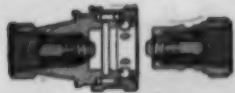
HANSEN

QUICK-CONNECTIVE 2-WAY SHUT-OFF COUPLINGS!



QUICK CONNECTION
AND
DISCONNECTION

INSTANT
AUTOMATIC FLOW
OR SHUT-OFF



Seals Both Ends of Line
AUTOMATICALLY
INSTANTANEOUSLY

Quick Connective
Fluid Line Couplings for
AIR • OIL • GREASE • HYDRAULIC
FLUIDS • REFRIGERANTS • STEAM
VACUUM • OXYGEN • ACETYLENE
GASOLINE • COOLANTS • WATER

HOSE CLAMPS • HOSE CLAMP
PLUGS • HOSE CLAMP SICKETS
HOSE CLAMP COUPLINGS

To connect a Hansen Two-Way Shut-Off Coupling, you just pull back the sleeve and push the Plug into the Socket. To disconnect, merely pull back sleeve. No tools required. Similar valves in Socket and Plug shut off both ends of line when Coupling is disconnected—practically eliminate spilling of liquid or escape of gas at instant of disconnection.

FEMALE PIPE THREAD CONNECTIONS FROM 1/8" TO 1"

Hansen Series HK Two-Way Shut-Off Couplings are available with female pipe thread connections from 1/8" to 1" inclusive. Available in brass or steel.

Also Straight-Through and One-Way
Shut-Off Couplings. Write for Catalog.
REPRESENTATIVES IN PRINCIPAL CITIES

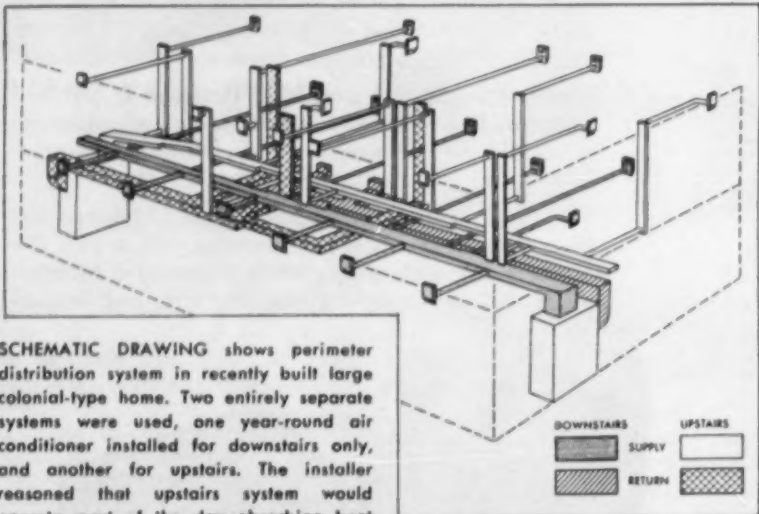
SINCE 1915



QUICK-CONNECTIVE FLUID LINE COUPLINGS

THE HANSEN MANUFACTURING COMPANY

4031 WEST 150th STREET • CLEVELAND 11, OHIO



SCHEMATIC DRAWING shows perimeter distribution system in recently built large colonial-type home. Two entirely separate systems were used, one year-round air conditioner installed for downstairs only, and another for upstairs. The installer reasoned that upstairs system would operate most of the day absorbing heat rising from below and counteracting solar heat penetrating from the roof and upstairs exterior wall. Downstairs zone cuts in to absorb excess and to fulfill active living requirements.

FURNAS ELECTRIC CONTROLS do the best job for AIR CONDITIONING and REFRIGERATION



SAVE WITH "In-Between" SIZES

Instead of just 5 Magnetic Starters in the 1 to 100 hp range, Furnas Electric offers you 9 sizes—the 5 standard sizes plus 4 "in-between" sizes. The many "in-between" sizes in the Furnas Electric line allow you to choose the control that is best suited for your particular job—at a saving to you in cost, space and capacity.

Write today for Bulletin 5411—1111 McKee Street, Batavia, Illinois

A9



FURNAS ELECTRIC COMPANY
BATAVIA, ILLINOIS

SALES REPRESENTATIVES IN ALL PRINCIPAL CITIES

Alter Booklet Covers Firm's History, Services

—KEY NO. R-1130—

CHICAGO—A booklet was recently issued to acquaint interested persons with the history and services of the Harry Alter Co., specialists in supplies and parts in the fields of air conditioning, refrigeration, and electric motors, the company announces.

The Harry Alter Co. also issues at semi-annual intervals a catalog known as the "Dependabook" which illustrates, prices, and describes over ten thousand items. The latest is just off the press. Either or both the booklet and the purchasing catalog are free.

Orders Chart Issued On Room Unit Covers

—KEY NO. R-1131—

NEW YORK CITY—All-Weather Supply Co., Inc. here announced recently that it has completed its new orders chart for "All-Weather" custom-fit window air conditioner covers to include 1956 units.

Covers for mid-installation of flush models are also available, according to Jack Graubard, vice president.

Construction of Grommet V-Belts Described

—KEY NO. R-1132—

MILWAUKEE — Construction features of the "Texrope" grommet V-belt are described in a new bulletin recently released by Allis-Chalmers Mfg. Co.

Bulletin 20B6497C states that Texrope grommet V-belt limits shrinkage, stretch, aids grip, and runs cool.

Plastic Pipe, Fittings Illustrated In Bulletin

—KEY NO. R-1133—

NEW YORK CITY — "Ace" Supplex flexible polyethylene plastic pipe and fittings are described in an eight-page bulletin CE-57 recently issued by the Supplex Co., Div. of American Hard Rubber Co. here.

Contents include applications for Supplex pipe, such as for recirculating lines for air conditioning, sizes of standard pipe and fittings, installation instructions, technical properties, and estimated flow rates for water in various pipe sizes.

A chart lists many common in-

dustrial liquids—acids, bases, organic chemicals, etc.—and specifies which of these may be carried in Supplex piping.

The piping, non-toxic, is approved by the National Sanitation Foundation for use with water.

Industrial Roof Exhausters Detailed

—KEY NO. R-1134—

FRANKLIN PARK, Ill.—Four pages of illustrations, performance ratings, and diagrams make up Chicago Blower's new "Hi-velocity" industrial roof exhaustor bulletin (CH-101).

The bulletin explains the operational principles behind the fan's automatic damper blades, high velocity exhaust capability, and fusible link fire safety device, according to the fan manufacturer.

Paragon Publishes Time Control Data

—KEY NO. R-1135—

TWO RIVERS, Wis.—Paragon Electric Co., manufacturer of time

controls, has published a new 20-page information booklet that is a complete reference to multi-purpose and industrial time controls.

The new booklet can be used as a check list of leading Paragon time switches and timers. It, also, provides answers for electrically operated automatic on-off operations used in commercial, industrial, and farm applications.

A fold-out reference chart defines what each control is, what it does, where it may be used, and how to select and purchase it.

Baseboard, Convactor Capacity Kit Offered

—KEY NO. R-1136—

LA CROSSE, Wis.—A new "Radiation Selector Kit," designed to enable wholesalers and contractors to accurately figure the right amount of baseboard and proper convactor capacity for any job, has been developed by the Trane Co. here.

The kit includes a pad of radiation work sheets for use in record-

ing design conditions and dimensional data for individual rooms, a dial chart with Heat Loss Calculator on one side and Baseboard Selector on the other, along with a Convactor Selector card.

According to Trane, the kit makes it possible to use approved engineering methods for heating equipment selection while eliminating the use of voluminous tables, curves, and slide rules.

Contractors can obtain kits, at \$1 each, through wholesalers of Trane radiation products.

'Multi-Pak' Filter Outlined by AAF

—KEY NO. R-1137—

LOUISVILLE, Ky. — A new product bulletin, No. 237, describing the "Multi-Pak" dry-type "high efficiency" air filter was recently issued by American Air Filter Co., Inc. here.

Multi-Pak was developed for those applications that require air filters of standard construction but need above cleaning efficiency.

ENGINEER

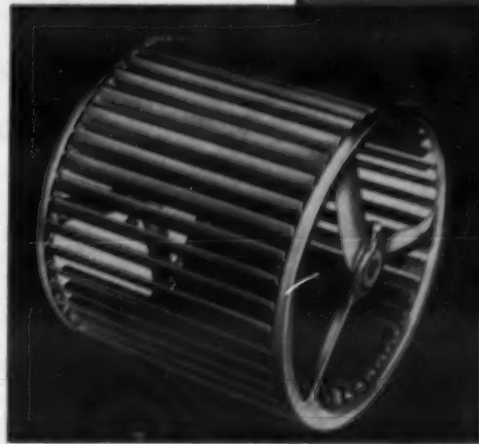
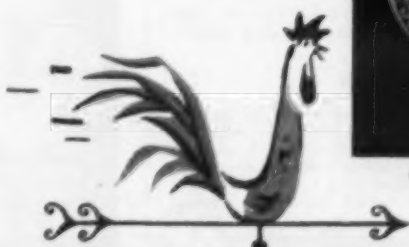
with experience in heating and air conditioning who wants to write. Should have some background in written expression. This is an attractive long-range opportunity with top firm in its field. Send resume to BOX A5667, Air Conditioning & Refrigeration News.

Dependable Distribution of Sequoia-made Climate

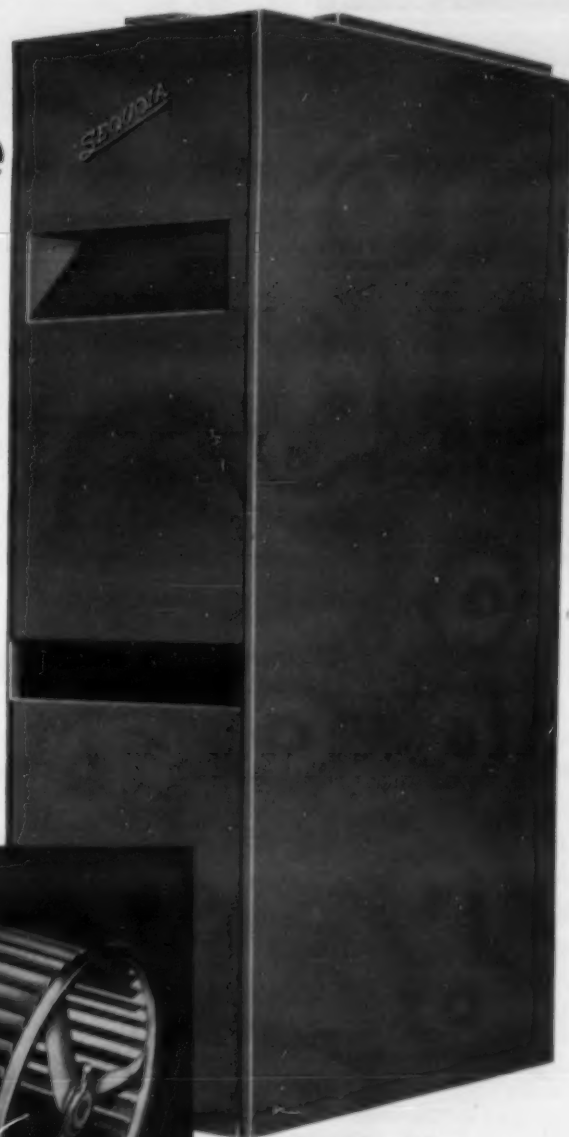
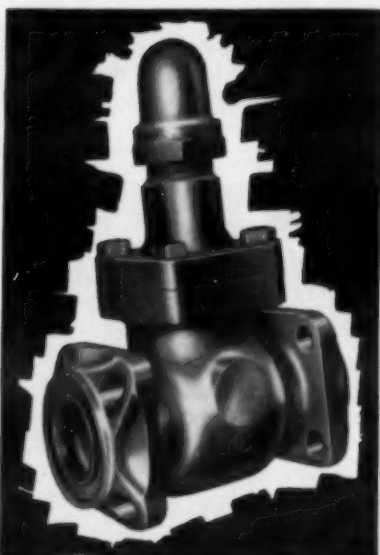
Furnace design keyed to modern architectural requirements, hard-to-heat floor plans and perimeter heating installations, mark SEQUOIA'S line of furnaces and air conditioning units.

The heart of these units, providing a constant, even flow of "SEQUOIA-MADE CLIMATE" are MORRISON BLOWERS... highly efficient... always dependable.

There must be a reason why MORRISON BLOWERS are built into so many of the leading furnaces. Why don't you write our engineers about your Blower problems.



Morrison Blower used in Furnaces.

SEQUOIA'S
Forced Air
Gas Furnace.**Frick Valves**

Are available, with sealcaps, in sizes of 1/4" through 8", for all refrigerants including the Freons, Genetrons and Isotrons. Standard valves up to 14". Many built-in advantages. Stocked in principal cities. Ask for new catalog of valves, fittings and supplies: write

Frick Co.
Haverhill, Mass.

MORRISON PRODUCTS INC. 16816 WATERLOO ROAD CLEVELAND 10, OHIO

Refrigerant Piping

This is the third in a series of articles by Mr. Lindsley covering some fundamentals in the installation, service, and maintenance of refrigeration and air conditioning systems. This article on "Refrigerant Piping" is being published in two parts. The conclusion will appear next week.

Much of the material is concerned with proper practices in such important activities as maintenance of water-saving devices, start up and check out of systems, correct refrigerant piping practices, and "know-how" in servicing residential air conditioning systems.

The author of the articles has had many years of experience in directing refrigeration service operations, and in instruction on service problems.

By E. D. Lindsley, Mgr. of Technical Section,
Air Conditioning & Refrigeration Service Div.,
Worthington Corp., Ampere, N. J.

SUCTION LINES

Very careful consideration must be given to the design and sizing of suction piping, to have efficient operation from each part of the equipment, the suction line plays a most important

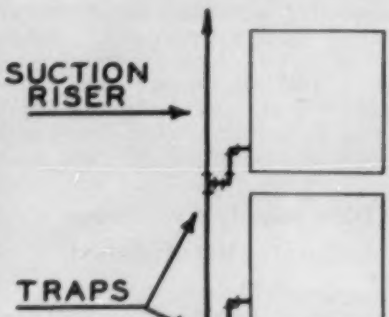
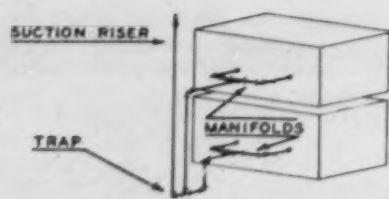
part in the return of oil to the compressor.

This must be accomplished without abnormal pressure drop in the line and without slugging at the compressor.

When compressor and evaporators are paralleled, many difficult problems are present. The system should be designed with these problems in mind.

When one or more evaporators are installed above the condensing unit, the suction lines should be run upward from the coil to form a trap as shown in Figs. 1 and 2.

Traps should be placed as near to the coil as possible, and the suction line should run upward to the height of the coil. This will help prevent the condensed vapors remaining in the coil from draining directly into



FIGS. 1 & 2—Suction piping arranged to provide trap to prevent the upper coil from draining into lower coil.

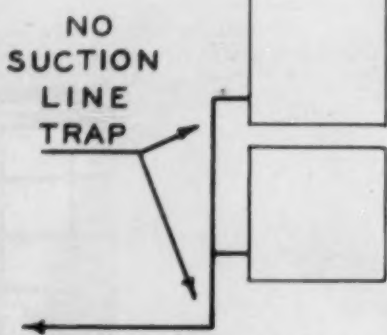
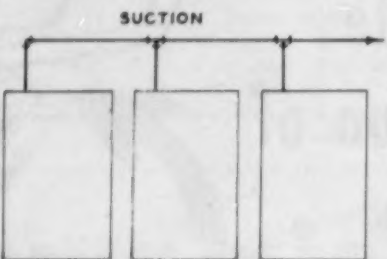


FIG. 3—Mixture-liquid and vapor effects bulb temperature of lower coil.



the compressor.

The importance of proper piping, when interconnecting evaporators is often overlooked, consequently the expansion valves cannot operate properly, causing the compressor to slug from too much liquid.

In Fig. 3, where no suction line trap has been used, a mix-



LARKIN AIR COOLED CONDENSER

The acid test of any product is performance. That's why you will find Larkin products used so widely for so many different refrigeration and air-conditioning applications. Users know from past experience that they can count on Larkin for top performance—day in, day out—year in, year out.

Manufacturers of the original Cross-Fin Coil • Humi-Temp Units • Frost-O-Trol Hot Gas Defroster • Air Cooled and Evaporative Condensers • Cooling Towers • Air Conditioning Units and Coils • Direct Expansion Water Coolers • Heat Exchangers

LARKIN COILS
519 MEMORIAL DR., S.E. • ATLANTA, GA.

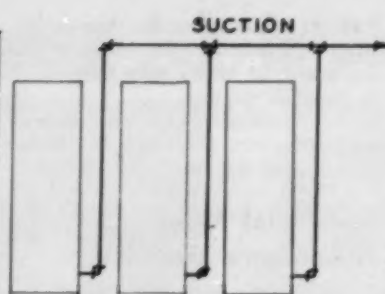


FIG. 5—Without traps, same results as in Figs. 3 and 4.

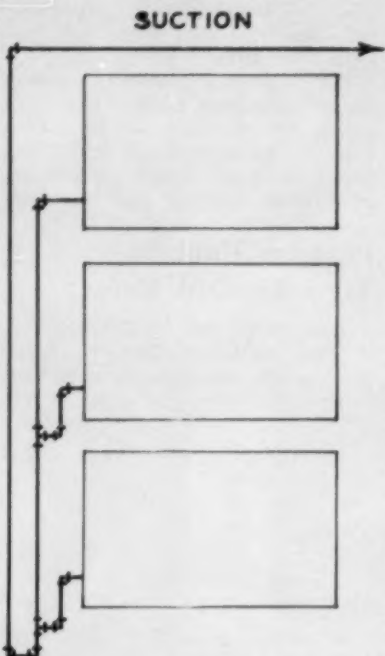


FIG. 6—Properly trapped, no gases or liquids will be susceptible to thermal bulb operation in coils below or alongside.

ture of semi-vapor and liquid refrigerant can flow from the top coil down to the lower coil, some tending to flow into the branch tee of the lower coil, thus causing an effective temperature change at the expansion valve bulb. This will affect the proper function of the expansion valve and can also cause a slugging at the compressor.

DESIGNING SUCTION LINE FOR MULTIPLE EVAPORATORS

It must be remembered that the suction piping must be installed in such a manner to prevent the cold suction vapors from draining down the suction line and affecting the operation of the expansion valve.

In Figs. 4 and 5, if the suction piping were installed in the manner described, it would interfere with the proper operation of the expansion valve.

If one coil requires refriger-

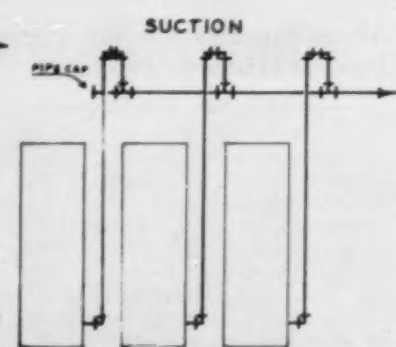


FIG. 7—Each coil properly trapped.

ant, with the condensing unit running, it would be possible for the cold suction vapor to drain into the suction line of the other coils and affect the operation of the expansion valves on these coils.

The solution to this problem is shown in Figs. 6 and 7.

In Fig. 6, the branch suction lines from each coil have been trapped, thus preventing the draining of the refrigerant from one coil into another. Trapping is very important when coils are stacked in banks, one on top of another.

(To Be Continued)

B-W Air Brake Names 3 In Mfg. Section

EVANSVILLE, Ind.—John R. Morrill, general manager of the Evansville Div.—Bendix-Westinghouse Automotive Air Brake Co., has announced three appointments in its manufacturing section.

They are: Richard J. Gerard, Jr., named manager of production control; Edmund A. Tenbarger, material control supervisor; and Alvin J. Knapp, material handling supervisor.

Gerard for 15 years was associated with Servel, Inc., the past three years as production control supervisor.

Tenbarger comes to Bendix-Westinghouse from Servel where he started in 1942 as messenger boy and progressed to planning and scheduling supervisor for the Commercial Refrigeration Div. Knapp is also a Servel veteran.

James F. Brown Dies

EVANSTON, Ill.—James F. Brown, 57, owner of Utilities Air Conditioning Co. here, died recently at Veterans Research hospital.

...bring
head
pressure
DOWN

...keep
operating
efficiency
UP

with anco condenser cleaner

ANCO Condenser Cleaner removes scale and rust from condensers within 2 to 15 hours, depending on the thickness of the scale. The head pressure drops to normal and the condenser's efficiency is restored. ANCO Condenser Cleaner is an exclusive dry formula which is simply dissolved in the sump while the system is in operation. It is equally effective in evaporative condensers and those with separate cooling towers.

Free WATER TREATMENT MANUAL

A complete booklet on the control of scale, rust and algae in refrigeration and air conditioning systems. No service department should be without a copy. It's yours for the asking.

Sold by wholesalers of air conditioning and refrigeration supplies

Anderson Chemical Company, Inc.
Box 1424 • MACON, GEORGIA

FOSTER

ORIGINATOR AND OLDEST CONTINUOUS MANUFACTURER OF
REFRIGERATORS AND FREEZERS
Designed and engineered for heavy duty performance.

FOSTER BUILDS OVER 200 MODELS OF MATCHED PRODUCTS
ONLY ONE TOP QUALITY LINE! NO 2ND OR 3RD LINES!

Whether it's for a hotel, restaurant, school, hospital, or any institutional user — there's a model designed specifically to fit individual needs.

Foster has had long and successful experience in building welded all-aluminum refrigerators and freezers for installations all over the world. They have met every in-the-field test for strength, durability and long life.

Thousands upon thousands of satisfied users know that Foster meets the most exacting specifications, the most critical demands of hard, day to day use, year after year.

And most important—they're priced low and right!

EXCLUSIVE SALES FEATURES CLOSE ORDERS
SELECTIVE DISTRIBUTION INSURES PROFITS!

NATIONWIDE FACTORY TRAINED REGIONAL
SALES MANAGERS FOR SALES AND SERVICE.
FOSTER REFRIGERATOR CORP.
HUDSON, N. Y.

For information write to Box 32 at the above address.

San Francisco Unions--

(Concluded from Page 1)
right there in the agreement." A verbatim copy of the agreement was made available to AIR CONDITIONING & REFRIGERATION NEWS.

Convenient pocket booklets of the agreement are obtainable from International offices of the two unions.

All Disputes To Be Handled Locally

No disputes will be sent to the National Joint Board. Officers of both Internationals have agreed all disputes shall be handled on the local level.

All interpretations required will be made by general officers of the UA and Sheet Metal Workers' International.

Any disputes on work not already set out in the agreement will first be handled by local area representatives. Failure to

resolve such disputes will result in referral to an International representative from each organization.

Settlement Failure Referred to Signatory General Officers

If they fail to settle, the entire matter will be referred to the signatory general officers, who are the general president and assistant general president of UA and the general president and general secretary-treasurer of the Sheet Metal Workers' International.

Along with the agreement, both unions sent the following letter to all general vice presidents, general organizers, special representatives, and business agents of local unions, from respective headquarters in Washington, D. C., under date of Sept. 5, 1956.

TEXT OF AGREEMENT

"Subject: Interim National Agreement between the United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada and the Sheet Metal Workers' International Association, covering the unloading, handling, and installing of 'Cooling, Heating, and Air Conditioning Units,' 'Room Radiators and Enclosures,' 'Kitchen Equipment' and mutual cooperation.

"We are pleased to inform you that the General Officers of the United Association and the Sheet Metal Workers' International Association have renewed efforts to settle questions of a jurisdictional nature between these two International Unions.

"As you know, these efforts commenced several years ago, but were discontinued and committees representing both organizations have not met for this purpose for some time.

"During the past several months (upon request of the National-Joint Board for the Settlement of Jurisdictional Disputes) the General Officers of the United Association have renewed discussions with the General Officers of the Sheet Metal Workers' International with the hope of resolving our differences pertaining to the unloading, handling, and installing of the various equipment mentioned above. Mr. John Dunlop, Chairman of the National Joint Board attended and monitored these meetings.

"At the last meeting held in Washington, D. C. on Aug. 31, 1956 which was attended by the General Presidents and General Secretary-Treasurers of both International Unions along with the Assistant General President of the United Association and Mr. John Dunlop, Chairman of the National Joint Board, the attached Interim National Agreement between our two international unions was duly signed by the respective General Officers.

"It was also agreed at the time of signing this agreement that no disputes which might occur between our respective affiliated Local Unions will

be sent to the National Joint Board for the Settlement of Jurisdictional Disputes, Building and Construction Industry, and the officers of both International Unions agree that all disputes which might arise between our respective organizations shall be handled on the local level in keeping with the terms of Interim National Agreement, and all interpretations that may be required covering any part of the agreement will be made by the General Officers of our respective organizations.

"Further, any disputes covering work not set out in the Interim National Agreement will be handled in the following manner: The first attempt to be made by the Local Union representatives in the area, and upon failure to resolve the disputed work question the matter will then be referred to an International Representative of each organization; and upon failure of their settling the work in question the entire matter will be referred to the General Officers signatory to the Interim National Agreement.

"In conclusion, we are confident that the working relationship between our membership will be greatly benefited, and of equal, if not greater importance, our bargaining position with employers in the industry will be greatly strengthened.

"We pledge ourselves to carry out the full intent and purpose of this agreement and to call upon our membership, representatives, and officers to approach this task as a unified force that will ultimately succeed in organizing every eligible member into our respective organizations.

"(signed) Robert Byron, President, Sheet Metal Workers' International Association.

"(signed) Peter T. Schoemann, General President, United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada."

Here is the agreement in full:

It is the purpose of this interim agreement to improve relations between the two organizations, and mutually to assist each union to secure work coming within their recognized jurisdiction.

"It is understood that this interim agreement shall not relate to or have any bearing on jurisdictional disputes that may occur between either of the parties to this agreement and any other international union or subordinate body thereof.

"It is understood that any adjustment made under the terms of this interim agreement shall not prejudice the jurisdictional claims of either international union.

"Article I—Cooling, Heating, and Air Conditioning Units.

"(1) a. The installation of gas or oil unit heaters for heating purposes only, not in connection with a duct system, shall be the work of the United Association.

"b. The installation of gas or oil unit heaters for heating purposes only, in connection with duct systems, shall be the work of the Sheet Metal Workers' International Association.

"c. The installation of warm air furnaces shall be installed by members of the Sheet Metal Workers' International Association.

"(2) The installation of completed and/or knock-down package type heating and cooling units consisting of fans, filters, refrigeration condensing units, and dampers, with heating coils and/or cooling coils assembled therein, whether or not in connection with

a duct system, shall be unloaded and installed by a composite crew consisting of an equal number of members of the Sheet Metal Workers' International Association and the United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry with the understanding that the members of the Sheet Metal Workers' International Association shall install any ductwork in connection with the unit and members of the United Association of Journeymen and Apprentices of the Plumbing and Pipe Fitting Industry shall install all piping in connection with the units.

"(3) The installation of self-contained window units which ordinarily set in the windows of commercial or residential buildings, of which Philco and Mitchell are typical, are not covered by paragraph 2 above, and shall be installed by members of the United Association of Journeymen and Apprentices of the Plumbing Pipe Fitting Industry.

"(4) The installation of Carrier-Weathermaster High Velocity Units or similar units shall be performed as follows: The unloading, handling, and setting of the plenum chamber and/or wind box is the work of members of the Sheet Metal Workers including the installation of the flexible tubing or duct connection to the plenum chamber or wind box. The unloading, handling, and setting of the coil section is the work of members of the United Association including all pipe work in connection with this type of unit. If such units are shipped to the job as a complete unit which includes the coil which cannot be separated from the plenum chamber or wind box, the unloading, handling, and installation shall be performed by a composite crew consisting of an equal number of members of the Sheet Metal Workers and the United Association, with the understanding that members of the Sheet Metal Workers shall install the ductwork in connection with the unit and members of the United Association shall install all piping in connection with these units.

"(5) Combination Room Cabinets for Heating or Cooling: The installation of room cabinet heating and/or cooling units which also provide ventilation through a fresh air inlet from outside for a single room and are not part of a duct system shall be the work of the United Association to unload, handle, and install. (The Trane Company 'Uni-Trane' unit is illustrative). If the same unit is a part of a

duct system the unloading, handling, and setting of the unit shall be performed by a composite crew consisting of an equal number of members of the Sheet Metal Workers and the United Association.

"(6) Where the booster coil is hung separately from the ductwork, the installation of the booster coil is the work of members of the United Association. Where the booster coil is inserted in the ductwork, and not supported separately, the installation of the booster coil is the work of members of the Sheet Metal Workers. The installation of free-standing coils, regardless of whether they are built within a sheet metal housing, is the work of members of the United Association.

"Article II—Room Radiators and Enclosures for Heating Purposes only.

"(1) The installation of all room radiators, convectors, and fine-type radiators when enclosures are made to fit the radiator or convector and shipped to the job as a manufactured unit shall be handled, unloaded, and installed in their entirety by members of the United Association. An exception shall apply when an enclosure is made up and installed to cover space beyond the convector radiator, or used or installed beyond the cover of the manufactured convector unit to fill out a space between the end of the window bay and the radiator enclosure, in which case the handling, unloading, and installation of such enclosure shall be the work of the members of the Sheet Metal Workers. When an enclosure is specially fabricated and not shipped to the job as a manufactured unit, the installation of such enclosure shall be installed by members of the Sheet Metal Workers.

"(2) The installation of room cabinet heating units only which also provide ventilation through a fresh-air inlet from outside for a single room shall be the work of members of the United Association to unload, handle, and install. (The Herman-Nelson and Nesbitt schoolroom units are illustrative). The unloading, handling, and installation of the cabinets and book cases in connection with these types of units shall be installed by members of the Sheet Metal Workers.

"(3) The final installation of all enclosures for Carrier-Weathermaster High Velocity Units or similar units shall be installed in their entirety by members of the Sheet Metal Workers' International Association.

"Article III—Kitchen Equipment.

"(1) The unloading and distribution of kitchen equipment to the room in which it is to be set shall be performed by a composite crew of equal numbers of members of the Sheet Metal Workers and members of the United Association.

"(2) The setting of kitchen equipment with no piping connections shall be set by members of the Sheet Metal Workers. The setting of kitchen equipment which has piping connections and which is free standing shall be set by members of the United Association, except steam tables and salad tables, which shall be performed by members of the Sheet Metal Workers. The setting of kitchen equipment which has piping connections and which is cut, fitted, or welded and is set in line shall be set by members of the Sheet Metal Workers.

"(3) The installation of piping connections shall be performed by members of the United Association.

"(4) The welding and cutting, fitting, and other sheet metal work shall be performed by members of the Sheet Metal Workers.

"(5) The fabrication of kitchen equipment is the work of members of the Sheet Metal Workers. The installation and fabrication of pipe work within the kitchen equipment shall be the work of members of the United Association.

"(6) The fabrication and assembling of kitchen equipment and the installation of pipe work therein, shall be performed by an employer under an agreement with these organizations.

"Article IV.

"(1) In cases where composite crews are required under the terms of this interim agreement, both parties agree to furnish their members to the contractor who has the installation contract under the prevailing wages and conditions of the area.

"Sheet Metal Workers International Association.

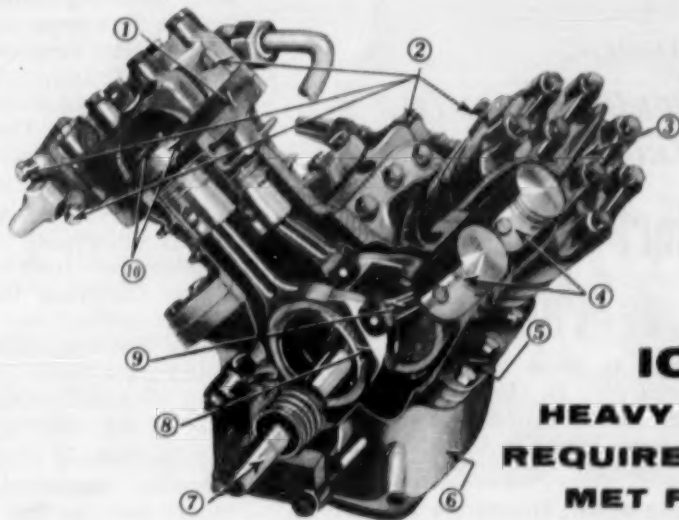
"(signed) Robert Byron, General President.

"(signed) Edward Carluough, General Secretary-Treasurer.

"United Association of Journeymen & Apprentices of the Plumbing and Pipe Fitting Industry of the United States and Canada.

"(signed) Peter T. Schoemann, General President.

"(signed) John J. McCartin, Assistant General President."

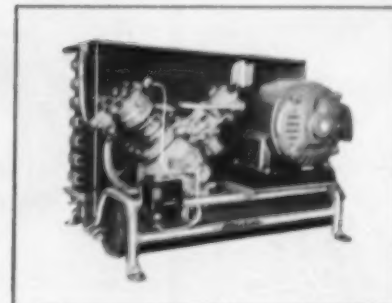


10 HEAVY DUTY REQUIREMENTS MET FULLY

by *Lehigh*

Don't shortchange that Heavy Duty Job!

Ask your Lehigh jobber to show you the new Lehigh units with this back-saver base. It not only chops off many pounds of useless dead weight but has many other advantages. It gives complete accessibility to oil compressor and motor parts. It gives faster and greater sub-cooling by increasing the air-flow over the receiver. It makes inspection and cleaning easier. It adds rigidity and strength to the unit — and it is less costly to ship. Now on all heavy-duty models 1/2 H.P. thru 1 H.P., air and water cooled. Coming soon 1 1/2 thru 3 H.P.



Lehigh
MANUFACTURING CO.

DIVISION OF LEHIGH, INC.

plant: LANCASTER, PENNA.

EXPORT DEPARTMENT: 12 E. 40th STREET, NEW YORK 17, N.Y.

1. Controlled gasket thickness assures uniform piston valve-plate clearance.
2. Choice of connections permits convenient installation of control lines.
3. All castings of finest close grained electric furnace grey iron from Lehigh's own foundry.
4. Lehigh heavy duty units from 1/2 H.P. thru 5 H.P. are equipped with multiple compression rings.
5. Removable cylinder block. No need to remove compressor body from system to service, repair or clean crankcase area. A real time and labor saver!
6. Larger crank case capacity assures ample oil supply for continuous heavy duty operation.
7. Heavy duty hardened shaft to controlled straightness.
8. All oversize bearing areas — an assurance of longer, trouble-free wear.
9. All moving parts controlled to .0005 tolerance throughout.
10. Valve plate precision ground and lapped. Reeds are finest Swedish steel.

U.L. & A.S.M.E. WATER-COOLED CONDENSERS 1/2 TON to 15 TONS
and
LIQUID RECEIVERS
for
EVERY REQUIREMENT
STANDARD REFRIGERATION CO.
332 E. Wayne, Dept. C
Chicago 12, Ill.

Write for our **NEW Catalog**

MANUFACTURERS REPRESENTATIVES

for well-known line of compressors, condensing units, water chillers and cooling towers 5 to 60 tons. Knowledge of air conditioning necessary—a number of important territories are now available. No objection to heating or other compatible lines. Write fully. BOX A5669, Air Conditioning & Refrigeration News.

Refrigeration Problems And Their Solution

By Paul Reed

For Service and Installation Engineers



Compressor vs. Vacuum Pump for Evacuating System-1

A short time ago, we received a nice letter from a service executive of one of the large chain organizations that operates hundreds of grocery stores. As may be expected, its service department alone is a very sizable operation, and is run on a very business-like basis.

They keep careful service records, and are therefore able to accurately evaluate various methods of installation, service, and maintenance as to over-all costs. So when they standardize on some particular method, they

do so, not only on the basis of academic preference, but they know that method pays off in dollars and cents, as proven by their cost records.

Few companies are able to as accurately analyze and evaluate installation, service, and maintenance methods over as large a number of installations; so when they adopt and standardize on a method, it is a pretty good recommendation for that method.

EXTRACTS FROM THE LETTER

"For some years now manufacturers of hermetic compressors have supplied warnings in printed form with their machines telling the installer not to use the compressor to evacuate the system. Since some of

these manufacturers gave no reason for these warnings, many servicemen continue to use the new hermetic or semi-hermetic compressor for evacuating a new installation.

I am advised that Worthington service literature now explains that when the hermetic motor-compressor is used to pump out the system, the motor windings are subject to a low vacuum, and the installation on the motor windings may be damaged due to electric arcing.

Most servicemen may not understand that a given voltage will create a longer arc in an atmosphere of lower pressure than it will in an atmosphere of higher pressure. Most automotive men are aware that a spark plug that will "miss" under a pressure of some 100 p.s.i. or more, may "fire" beautifully at the same voltage when lying on the top of the engine at atmospheric pressure; therefore, this does not constitute a good test for a spark plug.

Most refrigeration and air conditioning servicemen will accept and follow instructions when the reasons have been explained to them, or when the instructions are substantiated by facts or circumstances that fall within their comprehension or experience.

COMMENTS ON THIS SUBJECT

The point brought out in this letter is interesting and well taken. It is true, of course, that there is a great deal more possibility of arcing across a vacuum than at high-pressure or even at atmospheric pressure. At low pressure, arcing could occur between the motor terminals inside the case if they were exposed, that is, bare and not covered by insulation.

If, however, these terminals or any other part of the motor winding were fully covered with a good insulation impervious to the refrigerant and oil, then it seems doubtful that a vacuum would have much, if any effect upon electrical leakage from one part of the winding to another.

Nevertheless, vinyl acetal, the electrical insulation most commonly used on the wire of the stator coils of hermetic motor-compressors, is not entirely impervious to mixtures of refrigerant and oil. There is some tendency for this insulation to absorb some of the refrigerants now in common use, and in this respect, Refrigerant 22 appears to "soak into" the insulation more than does Refrigerant 12.

INSULATION MAY BECOME SOFTENED

The author is not aware of any published data on the breakdown voltage of the insulation after being exposed to various mixtures of refrigerants and oil, and then tested under vacuum and various pressures above atmospheric, but softened insulation is weaker and probably more subject to electrical leak-through during low-vacuum conditions than at higher pressures.

Moreover, it is true that vinyl acetal insulation is attacked rather readily by hydrochloric acid, and this acid can be, and too frequently is, present in refrigeration systems.

This acid can be formed in the system in several ways: direct reaction between the refrigerant and any water present, but this represents a comparatively small amount of acid; and

breakdown of the refrigerant if it is exposed to excessive temperatures, and under this circumstance, large amounts of acids can be formed.

Despite this rather academic discussion regarding the possibility of electrical leakage through the insulation or of arcing, it definitely is very poor practice to use a brand-new, clean, dry motor-compressor to evacuate a system, for in so doing, dirt, moisture, air, and no telling what else, will be drawn into the compressor and thereby contaminate the compressor and compressor oil, and in most designs, the motor also.

(To Be Continued)

Redmond
MICROMOTORS
One of largest stocks
in the world!
FACTORY DISTRIBUTORS
MARVIN L. "FERGIE" FERGESTAD
CYCLO-FREEZE CORP.
6318 Cambridge, Mpls. 16, Minn.
West 9-6794

SALES ENGINEER AIR CONDITIONING & REFRIGERATION

A large nationally-known manufacturer offers an exceptional opportunity for a MATURE Sales Engineer who has had experience in the various phases of the air conditioning and refrigeration business and a creditable record in sales.

The position is a special assignment in the Chicago area handling sales relations with major national customers. This is a career opportunity for the right man.

In application please give a complete resume of education and experience. Replies will be confidential.

BOX A5679, Air Conditioning & Refrigeration News.

Servicemen, Salesmen, Dealers!

NOW ...AIR CONDITIONING SIMPLIFIED in a new, fact-filled booklet 'Short, Short' Course in Air Conditioning Fundamentals

... Everything you need to know about air conditioning and how it works ... D. C. Schaffer's condensed course in comfort air conditioning—a complete summary for servicemen, salesmen, dealers and others who are not engineers.

... Includes—The Nature of Air, Moisture • Psychrometric Chart • Fans • Air Flow Factors • Grilles • Outlets • Dampers • Distribution • Ventilation • Filtration • Sound Control • Comfort.

... You'll want your personal copy of 'Short, Short' Course in Air Conditioning Fundamentals for ready reference. A limited supply is available at only 25¢ per copy (quantity prices upon request). ... Order your copy now!

Write for 'Short, Short' Course in Air Conditioning Fundamentals—Business News Publishing Co., 450 W. Fort St., Detroit 26, Mich., or use the handy coupon below.

MAIL THIS
COUPON
TODAY!

Business News Publishing Co.
450 W. Fort St., Detroit 26, Mich.

11-19-56

Please send me copies of 'Short, Short' Course in Air Conditioning Fundamentals @ 25¢ each.

☐ Check Enclosed ☐ Send Bill

Name

Company

Street

City Zone State

Booklet sent post-paid if remittance enclosed.



A TYPICAL CONFIGURATION—
EFFICIENT, COMPACT DESIGN

Send for catalog
TT-652
TODAY
or call
TERHUNE 5-2808

EDWARDS ENGINEERING CORP.
100 ALEXANDER AVENUE • POMPTON PLAINS, NEW JERSEY

Edwards CO-AXIAL CONDENSERS

The NEWEST design in water-cooled refrigerant condensers. Used by major equipment manufacturers because of these—

SELLING ADVANTAGES:

- Use 35% less water
- Cost reduced 30 to 40%
- Stock sizes: ½ to 7½ tons
- No internal joints
- Easy installation
- Many compact shapes

Vornado Air Conditioner Line --

(Concluded from Page 1, Col. 4)
every model in the line, it was pointed out.

"A 'Twin-Thin' line that can be mounted in the upper sash, lower sash, through-the-wall, flush inside, or can even be rolled about from room to room highlights the line," the company said. "This new Vornado unit measuring only 16 in. low and 16 in. thin is adaptable to any desired installation," the firm noted.

Auto Air Conditioner

In announcing Vornado's entry into the automobile air conditioning field, O. A. Sutton, president, said the company's new unit is engineered for true mass production, "making possible appliance-type nationwide sales and merchandising efforts."

Price of the unit was not revealed, but company officials stated that "it will be competitive with anything now on the market."

In discussing marketing plans, Albert S. Bross, vice president for sales, outlined three basic steps the company will follow in utilizing the mass selling techniques of the appliance-type stores for its new automobile air conditioner.

"Dealers will be franchised on a selected basis, insuring aggressive dealers unlimited sales potential," he said. "Volume sales leads will be developed for these selected dealers by Vornado through the most aggressive and powerful sales and advertising campaign ever used in the promotion of automobile air conditioners. Dealers will sell the unit as a compact, packaged unit that is easily handled. Installation, servicing, and warranty will be handled by factory-franchised facilities."

Instant Cooling

Bross said Vornado's new unit "is designed to give instant cooling action as soon as the car starts. Tests run in many cars during the past months under all types of conditions from dry deserts to tropical areas show that it takes only a few moments to bring temperatures throughout the entire car down to comfortable levels."

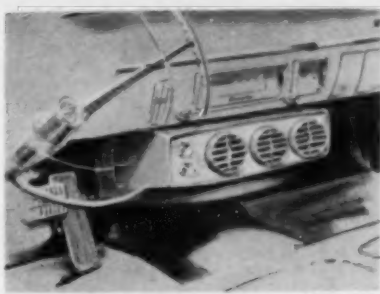
Cooling temperatures are automatically controlled by a thermostat. Air movement throughout the car is controlled by a three-speed blower.

"The unit fits neatly under the dash of the car and its decorative cabinet has been designed to blend in with dash decor of any model," it was pointed out. "Five air circulators are incorporated in the unit to give complete movement of cool air swiftly throughout the entire car. Each circulator is individually adjustable to give complete passenger comfort."

Vornado officials claim a greater cooling effect is achieved by these features.

"A Tecumseh compressor is used to operate the system. 'Freon-12' is used for charging gas. Fan motor is three-speed, series wound 1/2 hp. Vornado's unit has an air volume capacity of 250 c.f.m.

"The units are available in 6 or 12-volt models. High speed on the blower is 2,600 r.p.m.; medium speed, 2,400 r.p.m.; and



Vornado Auto Air Conditioner

low speed, 2,100 r.p.m. Unit is housed in a plastic case that measures 14 in. wide in front and tapers to 16 in. wide at rear. It is 6 3/4 in. high in front and 7 in. high at the rear. The case is 10 in. deep."

Describing the Twin-Thin room air conditioner, the company said controls allow for a choice of 18 automatic comfort settings. Pushbuttons operate the three-speed blower fan.

The blower fan operates independently for air circulation when cooling is not required. Thermostat, fresh air, and exhaust features are standard with the Twin-Thin line.

All controls are mounted on the front of the cabinet, which is done "in an entirely new design, giving it modern lines and decor." Directional air diffusers rotate full 360° for air control.

Vornado uses dual air filters on its 1957 Twin-Thin models and has added a chemical air purifier called "Magic Freshner" to give the air added freshness and remove any objectionable odors, according to the company.

"Condenser coil incorporates an exclusive new 'Duo-Flow' principle allowing double exposure of 'Freon' to coil surfaces and cooling air for greater heat exchange," it was stated. "Fin area in the evaporator coil has been increased 20% for more efficiency. The Twin-Thin line is designed for complete installation and servicing from inside the room."

Vornado's new Twin-Thin is available in two models. A 1-hp. unit model W100C can be used with 115-volt, 208-volt, and 230-volt current. A 1 1/2-hp. model W150C can be used with 208-volt and 230-volt current.

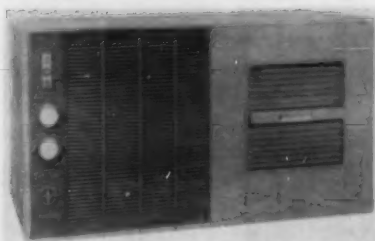
A new series of "budget-priced" "Deluxe" units that can be operated on ordinary house current has been added to Vornado's 1957 line. This line includes such features as flush mounting, single dial control, thermostat, exhaust, and a chemical air purifier that works in conjunction with the filter.

As an added feature to its budget-priced Deluxe line Vornado has made the air circulators available in three different color tones. This sales feature allows prospective buyers to select the color that best harmonizes with room color scheme at no added cost, the company said.

Deluxe models are available in 1/2-hp. model D50C using 115 volts; 3/4-hp. model L75C using 115 volts; 1-hp. models D100C using 115 volts, S100C and D100C using 208 or 230 volts. Model D150C is 1 1/2 hp. using 208 or 230 volts.

2-Hp. Unit Redesigned

Vornado's 2-hp. unit has been completely re-designed for 1957. Over-all size has been reduced



Twin-Thin Room Unit

one-third, according to the company. Pushbuttons for automatic control of the unit are located behind a door on the cabinet front.

Automatic thermostat, three-speed blower control, independent blower action, fresh air and exhaust are all incorporated in the 2-hp. unit for greater sales appeal.

Dual air filters have been added to give improved air filtration. Three patented nozzles "that pressure-circulate massive volumes of cool air" create greater cooling effect, it was reported. Nozzles are adjustable to tilt up or down and rotate 360°.

Vornado's 2-hp. unit model M200C can be installed in the average window and mounted flush with the inside. For offices and shops it can be mounted flush in the transom with remote controls.

Two sizes of casement window units are offered. These new units can be mounted half-in and half-out; or all inside casement windows. Both models can be used with 115-volt or 230-volt current. Accessory panels permit mounting in normal sash windows when desired.

Cabinets are finished in "Granite-tone gray." Thermostat, fresh air, and all other controls are concealed behind a door mounted on cabinet front. Models include 1/2-hp. size, model C75C, and 3/4-hp. size, model 375C.

"All Vornado air conditioners have had their capacities rated according to ARI 110-56 testing procedures," the company said.

This year Vornado has launched the largest advertising and merchandising program in the company's history, it was stated.

Suggested list prices are:

CUSTOM MODELS	
115 Volts	
Model No.	
C50C-1	\$289.95
C50C-1T	299.95
C75C-1	339.95
W100C-1	329.95
230 Volts	
C75C-2	339.95
W100C-2	339.95
W150C-2	399.95
M200C-2	439.95
208 Volts	
C75C-3	349.95
W100C-3	349.95
W150C-3	409.95
M200C-3	449.95
DELUXE MODELS	
115 Volts	
D50C-1	279.95
L75C-1	329.95
D100C-1	299.95
230 Volts	
S100C-2	299.95
D100C-2	319.95
D150C-2	379.95
208 Volts	
S100C-3	309.95
D100C-3	329.95
D150C-3	389.95

All models with thermostat except model C50C-1. All above prices include excise tax where applicable.

At a press meeting in New York City, Sales Vice President Bross reported that in 1956 the company's Vornado room unit business was almost double 1955 in spite of the cool summer. "We are confident that in 1957 we will add a 50% increase to our 1956 business."

He also noted that no product

changes were made on the firm's 2 and 3 1/2-ton self-contained Vornado home air conditioners. He said distributors were presented "with an aggressive merchandising program which should maintain or improve our industry position in 1957."

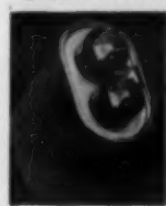
Fluor Div. --

(Concluded from Page 1, Col. 3) and sales data for the three series of cooling towers have been completed, according to G. M. Anderson, general manager of the newly-formed division. Laurens Pratt, sales manager, is now concluding sales agreements for national representation in all major cities.

The full line Fluor cooling towers for this industry will include Series I (5 to 60-ton atmospheric spray-type cooler), Series II (7 1/2 to 100-ton forced draft tower), Series III (40 to 400 tons and over), induced draft cooling tower.

G-E Capacitor Resists Corrosion, Blistering

HUDSON FALLS, N. Y.—A "giant step forward in the fight against corrosion of capacitors



in air conditioning units" has been announced by General Electric Co.

Tests have shown that a new granite gray case paint and cadmium plated cover for General Electric's drawn oval air conditioning capacitors resist corrosion discoloration, pinpointing, and blistering, the company said.

"Capacitors with the new case finish and cadmium plated covers were subjected to 20% salt fog for 1,000 hours at 95° F., and showed no signs of corrosion," G-E further pointed out.

NOW
OIL SEPARATION AND
SYSTEM SILENCING
ENGINEERED INTO
A SINGLE UNIT



the HEAT-X 'OSM'
OIL SEPARATOR-MUFFLER

heat-x

Silencing is more than just incidental and partial with Heat-X 'OSM' Oil Separator-Mufflers. These units were specifically engineered to completely silence all system noises and absorb all pulsations from the compressor . . . in addition to separating entrained oil.

And these "all-in-one" units make float troubles a thing of the past. 'OSM' Oil Separator-Mufflers have no floats to hang open or stick closed. Instead, units incorporate a positive action Velocity Pressure Mechanism, exclusive with Heat-X, which opens only when compressor is running . . . closes of its own weight when compressor stops.

Ratings based on tonnage, not horsepower, permit close matching of unit to requirements . . . eliminate need to buy more than required capacity.

Ruggedly constructed to A.S.M.E. specifications. Available in capacities from 1 to 75 Tons F-12 and 1 to 100 Tons F-22.



REQUEST FREE DESCRIPTIVE CATALOG.

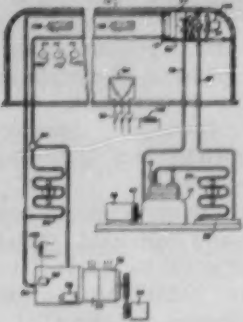
HEAT-X, Inc.

BREWSTER • NEW YORK

PATENTS

Week of June 19
(Continued)

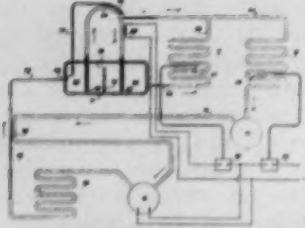
2,750,755. REFRIGERATING APPARATUS. Donald F. Alexander, Oakwood, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Original application March 7, 1946, Serial No. 652,515, now Patent No. 2,608,067, dated Aug. 28, 1952. Divided and this application Dec. 29, 1951, Serial No. 264,968. 1 Claim. (Cl. 62-4.)



Air conditioning means for an enclosure including a multiple cylinder compressor, a condensing means, a multiple section evaporating means, a motor for driving said compressor, an electrically operated unloading means for unloading at least one but not all of said cylinders, electrically operated fluid control means for disconnecting and rendering inoperative at least one but not all of the sections of the evaporating means, a first thermostatically controlled switch means responsive to the temperature of said enclosure for starting and stopping said motor, an electrically operated two-position switch means having a de-energized position for controlling the energization of the unloading means and the fluid control means to cause the unloading means to be in the unloading position and to cause the fluid control means to render inoperative at least one but not all of the sections of the evaporating means, said two-position switch means having an energized position for controlling the energization of the unloading means and the fluid control means to cause the unloading means to be in the loading position and to cause the fluid control means to be in the open position, a time delay switch means and a second thermostatically controlled switch means connected in series circuit rela-

tion with the electric operating means of said two-position switch means, said time delay switch means including switch closing means operable to closed position a predetermined period after the closing of said first switch means, said higher temperature switch means being operable to closed position in response to a higher temperature of said enclosure than the temperature at which said first means closes.

2,750,757. REFRIGERATING APPARATUS. Elmer W. Zearfoss, Jr., Philadelphia, Pa. Application April 27, 1955, Serial No. 504,148. 11 Claims. (Cl. 62-4.)



11. A refrigerating system including a condensing unit for selectively delivering liquid refrigerant to two evaporator circuits, a first sump, a second sump, the uppermost ends of said sumps being in open communication, said first sump having an inlet for condensed refrigerant and an outflow passage adapted to provide flow to one of said circuits, said second sump having an outflow passage disposed at a level below said first outflow passage and adapted to provide flow to the other of said circuits an inverted U-tube communicating with the lower ends of said sumps; a first heat exchange means adapted to cool said U-tube and cause flow of liquid from said first sump through said U-tube toward said second outflow passage; and a second heat exchange means operable to heat said U-tube thereby to terminate liquid flow therethrough and to restore the flow of liquid toward said first outflow passage.

2,750,758. AUTOMATIC DEFROSTING REFRIGERATOR CABINET. Theodore E. Hoyer, Utica, and Vincent S. Robinson, Sauquoit, N. Y., assignors to Mohawk Cabinet Co., Inc., Chadwick, N. Y., a corporation of New York. Application July 12, 1954, Serial No. 442,868. 8 Claims. (Cl. 62-4.)

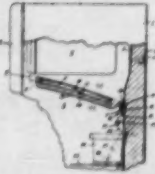
1. An automatically defrosting display cabinet for ice cream and the like comprising a frame including lower inner walls defining a product receiving chamber having an open top and upper walls defining an upper chamber having an open bottom communicating with a portion of said open top, a refrigerating apparatus including lower

expansion coils carried by said frame adjacent to and entirely outside of said lower inner walls, an upper expansion coil in said upper chamber connected to said lower expansion coils, the relative cooling capacities of said upper



and lower expansion coils being such as to cool the air in the upper chamber to a lower temperature than the temperature of the air in the product receiving chamber so as to establish a circulation of warmed air upwardly from said product receiving chamber into said upper chamber and cooled air downwardly therefrom into said product receiving chamber, means for controlling the operation of said refrigerating apparatus, means for automatically defrosting said upper coil, and heater means carried by said frame adjacent the open top thereof for creating a blanket of warm air therein so as to reduce air circulation in and out of said open top.

2,750,759. SLOPING BAFFLE FOR A REFRIGERATOR. Harold P. Harle, Erie, Pa., assignor to General Electric Co., a corporation of New York. Application July 30, 1952, Serial No. 301,756. 11 Claims. (Cl. 62-103.)



1. In a refrigerator including a storage compartment and cooling means located in the upper portion of said storage compartment and adapted to be defrosted, means for controlling the temperature of said food storage compartment and collecting defrost moisture from said cooling means comprising: a baffle disposed in said storage compartment beneath said cooling means, said baffle dividing said storage compartment into upper and lower portions, said baffle sloping downwardly toward the rear wall of said storage compartment, a member mounted on said rear wall, said baffle being differentially positionable with respect to said member for controlling the spilling of cold air from said upper portion of said storage compartment into said lower portion thereof, a pendulum portion formed on the rear of said baffle, said pendulum portion being bent away from said rear wall, and a trough spaced from said rear wall and receiving defrost moisture dropping from said pendulum portion, the spacing of said trough from said rear wall facilitating circulation of air to said lower portion of said storage compartment and minimizing spilling of cold air into said trough thereby to avoid freezing of moisture therein.

2,750,760. REFRIGERATING APPARATUS. Daniel L. Kaufman, Dayton, Ohio, assignor to General Motors Corp., Dayton, Ohio, a corporation of Delaware. Application April 19, 1952, Serial No. 283,211. 2 Claims. (Cl. 62-117.1.)

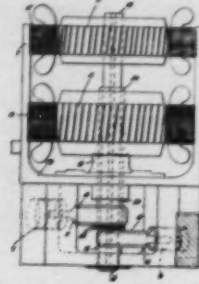


1. In an air conditioning system for use in an automobile having an engine compartment, an engine in said engine compartment, a passenger compartment, and a luggage compartment; the combination, a compressor adapted to be removably mounted in the engine compartment, torque transmitting means for drivingly connecting said compressor to said engine, a condenser, an evaporator, refrigerant flow connections between said compressor, condenser and evaporator, said refrigerant flow connections including a suction line and a discharge line leading to and from the compressor respectively, a two piece adapter for removably connecting one of said lines to said compressor, a first one of said pieces being carried by said one line and including a valve for closing said line at said adapter, the second one of said pieces being carried by said compressor and including automatic valve means supported therein, said last named valve means including a valve element for automatically sealing the passage leading to the compressor in response to separation of said first piece from said second piece, and means for removably securing said first piece and the line connected thereto to said second piece.

2,750,761. PLURAL TEMPERATURE REFRIGERATING APPARATUS. Eror Knut Fare, Sibbult, and Erik Holger Franzen, Lonsboda, Sweden, assignors to Aktiebolaget Fare Armaturfabrik, Sibbult, Sweden.

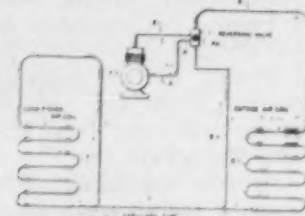
1. A refrigerating apparatus comprising at least one refrigerator and at least one freezing box which are com-

bined in a unit and having separate coolant circuits, a frame, a common motor compressor assembly for com-



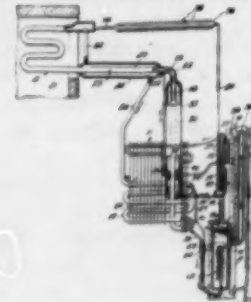
pressing the coolants in the coolant circuits on said frame, the motor compressor assembly having a compressor unit and a motor rotor for each coolant circuit, each rotor being connected to the compressor unit which it drives by means of a shaft, the shafts being arranged coaxially, the outside shafts bearing on the inner shafts, compressor units and motor rotors being arranged side by side along the common centre axis of the shafts.

2,750,762. REFRIGERATION SYSTEM FOR AIR CONDITIONING APPARATUS. Gerard G. Coyne, Erie, Pa., assignor to General Electric Co., a corporation of New York. Application July 23, 1954, Serial No. 445,250. 2 Claims. (Cl. 62-117.55.)



1. In a reversible cycle refrigerating system for heating and cooling air for an enclosure, a compressor, first and second heat exchangers, a capillary tube connected between said heat exchangers and serving to expand refrigerant from condensing pressure to evaporating pressure during both the heating and the cooling cycle, means for selectively connecting the discharge and the suction of said compressor to said first and second heat exchangers respectively during the heating cycle and to said second and first heat exchangers respectively during the cooling cycle, said means including the first and second conduits connected respectively to said first and second heat exchangers and a reversing valve connected to said conduits and to said compressor discharge and suction, said first conduit carrying hot discharge refrigerant from said compressor during said heating cycle and cool suction refrigerant to said compressor during said cooling cycle, and said first conduit being arranged in heat transfer relation with at least a part of said capillary tube during said cooling cycle and heating said capillary tube during heating cycle whereby the formation of gaseous refrigerant in said capillary tube is retarded during said cooling cycle and quickened during said heating cycle causing said capillary tube to be less effective to pass refrigerant during said heating cycle and effecting a lower refrigerant flow rate through said system.

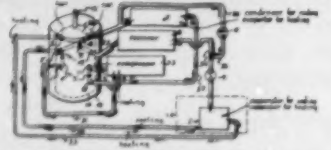
2,750,763. ABSORPTION REFRIGERATION. Wilhelm Georg Kogel, Stockholm, Sweden, assignor to Aktiebolaget Elektrolux, Stockholm, Sweden, a corporation of Sweden. Original application July 14, 1949, Serial No. 104,771, now Patent No. 2,655,010, dated Oct. 13, 1953. Divided and this application Dec. 23, 1952, Serial No. 327,621. Claims priority, application Sweden July 22, 1948. 21 Claims. (Cl. 62-119.5.)



1. In the art of refrigeration with the aid of an absorption refrigeration system having a circuit in which inert gas normally circulates in a path of flow including a place of cooling in which refrigerant normally evaporates in the presence of the inert gas circulating between first and second regions thereof, the improvement which comprises flowing liquid refrigerant by gravity between the first and second regions in the place of cooling and conducting unevaporated refrigerant passing from the place of cooling to another place at a lower level which is outside the normal path of flow of circulating inert gas and in which the liquid surface normally is always out of physical contact with inert gas when liquid refrigerant is present in said other place, flowing refrigerant from the other place in a path of flow

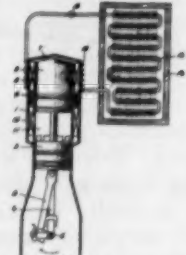
which includes raising such refrigerant in liquid phase against gravity by vapor lift action, effecting such raising of refrigerant against gravity while out of the presence of the inert gas, and conducting the raised refrigerant back to the place of cooling for gravity flow between the first and second regions thereof.

2,750,764. UNITARY REFRIGERATING AND HEATING SYSTEMS. Joseph F. Lynch, Cambridge, Mass., assignor to one-half to New England Trailer and Body Mfg. Co., Medford, Mass., a corporation of Massachusetts. Application April 2, 1951, Serial No. 218,774. 2 Claims. (Cl. 62-123.)



1. A cooling and heating system for an enclosed compartment including a unit designated as an evaporator serving as such in a cooling cycle and as a condenser in a heating cycle, a unit designated as a condenser outside said compartment serving as a condenser in said cooling cycle and as an evaporator in a heating cycle, a compressor unit having a discharge line and a suction line, line connection means and valve control means for sending a refrigerant fluid in the cooling cycle through the condenser, through a receiver, through said evaporator and back to said compressor suction line and in reverse order in the heating cycle, said evaporator having three lines thereto comprising two liquid lines and a single line used for both discharge from and suction to the compressor and valve means and connecting lines for using either one but not both of said liquid lines dependent upon whether said single line is used for discharge or suction.

2,750,765. COLD GAS REFRIGERATOR. Jacob Willem Laurens Kohler and Willem Frederik Schalkwijk, Hindhoven, Netherlands, assignors to Hartford National Bank and Trust Co., Hartford, Conn., as trustees. Application April 3, 1952, Serial No. 280,278. Claims priority, application Netherlands April 11, 1951. 5 Claims. (Cl. 62-136.)

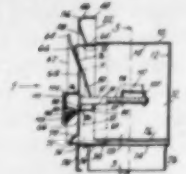


5. A cold gas refrigerator using a gas of invariable chemical composition which is subject to a closed thermodynamic cyclic process in which the gas is invariably in the same physical state comprising: at least one cylinder, a crankshaft, at least one piston in said cylinder connected to said crankshaft, said cylinder having a chamber on one side of said piston with a relatively low temperature and a chamber on another side of said piston having a temperature higher than said first chamber, said chambers varying continuously in volume, and means connecting a chamber of relatively low temperature with a chamber of relatively high temperature, said means comprising a freezer, regenerator and a cooler connected in series, said regenerator having a thermal capacity per cc. which is equal to

$$\frac{k-1}{k} \frac{P_{max}}{P_{min}} \frac{B_1}{B_2}$$

where f exceeds 0.05 and P_{max} is at least 3 atmospheres absolute.

2,750,866. AIR REGISTER. Robert G. Romig, Webster, N. Y., assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Oct. 24, 1952, Serial No. 316,631. 4 Claims. (Cl. 98-106.)



1. In an air delivery system for tempered air, a terminal assembly comprising in combination, a register box having a tempered air inlet, an air-flow divider within said box for splitting the air stream into oppositely directed moving portions, a register covering an open side of said box and providing a frame member having flared portions surrounding the box, a panel having flared portions for deflecting air movement away from said box, and adjustable means supporting the panel centrally of said frame and telescopically engaging said frame for controlling the spacing of the flared portions at the periphery of the panel and the frame.

(Continued on next page)

Government Contracts

SYNOPSIS OF PROPOSED PROCUREMENT

ARMY

Procurement Office, Aberdeen Proving Ground, Md. Attn: ORDBG-PR. AUTOMATIC VALVE SETTING AND CHECKING DEVICE FOR WIND TUNNEL—1 ea.—IFB 1163-67Q—Bid Opening 29 Nov 56.

Purchasing and Contracting Office Building, 202 Fort Myer, Arlington 11, Va. INSTALLATION OF AIR CONDITIONING SYSTEM at Arlington Hall Station, Arlington, Va.—Job—FB MDW-44-040-57-8—Bid Opening 29 Nov 56.

NAVY

District Public Works Office, Fifth Naval District, U. S. Naval Base, Norfolk, Va.

COLD STORAGE BUILDING at Naval Air Facility Weeksville, Elizabeth City, N. C. Deposit of \$25 required for plans and specs.—Job—IFB NOY 91332 Spec Nr 48267—Bid Opening 27 Nov 56.

Navy Purchasing Office, 4th & Independence Ave., Washington, D. C. Attn: SPF-1A.

The following items are procured under IFB 600-629-57-8—Bid Opening 26 Nov 56.

COOLING COILS, chilled water. Type A; sizes 42 DW thru 46 DW, 70 ea.—COOLING COIL, Type A, sizes 43 DF and 45 DF, 26 ea.—GRAVITY COIL, sizes 1G and 5G, 7 ea.—UNIT COOLER, chilled water Type B, sizes 43 UW and 45 UW with 115 V AC Motor, 4 ea.—per Spec MIL-A-2939(Ships) dated 27 Aug 1953 and Amend 5 dated 9 Jul 1956 as modified in invitation. The material under this specification is of a type on the Qualified Products List. (Note: An additional quantity of cooling coils has been reserved for Small Business under a partial set-aside).

District Public Works Office, Tenth Naval District, U. S. Naval Sta., San Juan, Puerto Rico.

AIR CONDITIONING, Building No. 31, Engineering Division Offices U. S. Naval Station, Roosevelt Roads, Puerto Rico—Job—IFB 1411/56—Bid Opening 29 Nov 56—\$25 Deposit required for plans & specs.

AIR FORCE

AF Contracting Office, 3800th AB Wing, Maxwell Air Force Base, Ala.

AIR CONDITIONING Second Floor of Building BUQON Maxwell, A. F. Base, Ala.—Job—IFB 01-600-57-76—Bid Opening 7 Dec 56.

Base Procurement Office, Elmendorf Air Force Base, Anchorage, Alaska.

HOUSEHOLD REFRIGERATOR—350 ea.—IFB 45-501-57-120—Bid Opening 23 Nov 56.

Purchasing & Contracting Office, Patrick Air Force Base, Fla.

AIR CONDITIONERS—Item—IFB 08-606-57-144—Bid Opening 7 Dec 56.

GENERAL SERVICES ADMINISTRATION

General Services Administration, Region 3, Business Service Center,

7th and D Sts., S.W., Washington 25, D. C.

REFRIGERATION EQUIPMENT & ICE CRUSHING MACHINE—1 lot—IFB FN-3H-7258-A—Bid Opening 11-27-56.

General Services Administration, Region 7, Business Service Center,

114 Commerce, Dallas, Tex.

AIR CONDITIONING COURTROOM & JUDGES CHAMBERS, Court House,

El Paso, Tex.—Job—IFB CR7554-399—Bid Opening 11-27-56.

General Services Administration, Region 9, Business Service Center,

312 N. Spring St., Room G-20, Los Angeles 12, Calif.

x-Mime 6

The following items are procured under IFB LA-709-57—Bid Opening 11-19-56.

AIR CONDITIONING UNITS 2 TON capacity Chrysler Air Temp #1620 or equal, 3 ea.—ONE TON CAPACITY, Chrysler Air Temp #1600 or equal, 2 ea.

General Services Administration, Region 2, Business Service Center,

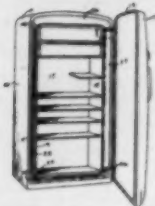
250 Hudson St., New York 13, N. Y.

HEATING SYSTEM REPAIRS at 45 Broadway, N. Y., N. Y.—Job—IFB-2PC-7-536(ADVT)—Bid Opening 11-26-56.

PATENTS

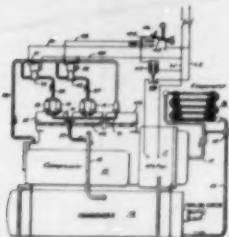
(Concluded from preceding page)

2,751,106. REFRIGERATOR CABINET. Milford J. Schrader, Greenville, Mich., assignor to Gibson Refrigerator Co., Greenville, Mich., a corporation of Michigan. Application Nov. 12, 1950, Serial No. 196,506. 2 Claims. (Cl. 230-9.)



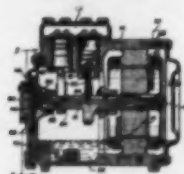
1. A refrigerator cabinet comprising inner and outer shells connected together in spaced apart relation, said shells being open at the front to define an access opening to the cabinet, said shells having opposed flanges extending substantially at right angles to said shells, and a throat molding extending between said shells at a side of the access opening and overlying the space between and having a projection angularly disposed to and overlying the flange of said inner shell, a plurality of resilient clips attached to said throat molding rearwardly thereof and engaging the flanges on said shells, one of said clips being attached to said projection and being formed to compress within the space between said projection and the adjacent flange and to flex to hook in positive snap on engagement with said inner shell flange, said last mentioned clip being generally of U-shaped configuration, one of the U-shaped arms of said clip being fastened to the throat molding and the other U-shaped arm of said clip receiving said flange on said inner shell.

2,751,143. UNLOADING MECHANISMS FOR REFRIGERANT COMPRESSORS. Gerald L. Biehn, Needham, Mass., assignor to Westinghouse Electric Corp., East Pittsburgh, Pa., a corporation of Pennsylvania. Application Feb. 2, 1953, Serial No. 334,670. 7 Claims. (Cl. 230-24.)



1. An unloader mechanism for a compressor having a cylinder, comprising valve means at the suction side of the cylinder for permitting, when open, gas compressed within said cylinder to pass to the suction side of the compressor, a control cylinder, a loosely fitted piston slidable in said control cylinder, means including a spring for causing said piston to hold said valve means normally open, means connected to the discharge side of said compressor and to said control cylinder for supplying compressed gas against one side of said piston for moving said piston against the action of said spring for permitting said valve means to close, means including a control valve connecting the interior of said control cylinder at the other side of said piston, with said suction side of said compressor for permitting, when said control valve is open, gas leaking past said piston, to flow to said suction side of said compressor, and means for closing said control valve for preventing the gas supplied against said one side of said piston from moving said piston against the action of said spring.

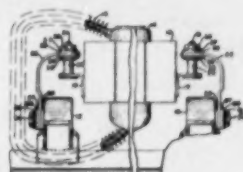
2,751,145. REFRIGERATING APPARATUS. James D. Olcott, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Oct. 21, 1952, Serial No. 316,009. 2 Claims. (Cl. 230-28.)



1. In a sealed motor-compressor unit, a main housing having an oil pump recess in its one vertically disposed wall, a motor stator supported by said housing, a horizontally disposed shaft journaled in said housing, a motor rotor secured to said shaft, compressor means in said housing including reciprocating impeller means, means whereby rotation of said shaft causes reciprocation of said impeller means for compressing a gas, said housing in-

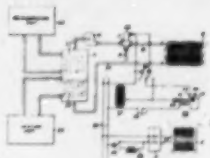
cluding an oil reservoir spaced downwardly from said horizontally disposed shaft, oil feed passages in said shaft, an oil pump adjacent one end of said shaft for forcefully pumping oil from said reservoir to said oil feed passages, said oil pump comprising a rotor drivably connected to said shaft and a rotatable cylinder in said recess surrounding said rotor and coextensive axially with said rotor, a pair of diametrically opposed impeller means carried by said rotor arranged to frictionally engage said cylinder so as to urge said cylinder to rotate, means for limiting the rotation of said cylinder within said recess, said wall having first passage means extending from its bottom edge to said pump recess for conveying oil from said reservoir to said recess, the lower portion of said first passage having an enlargement therein, a check valve disposed in said enlargement, said wall having a second passage leading from said oil reservoir to the inlet side of said check valve, means for closing the lower end of said first passage and for holding said check valve in place, said cylinder having a radially extending inlet port arranged in communication with said first passage means at all times, third passage means for conveying oil from said recess to the oil feed passages formed in said shaft, and a pair of radially extending outlet ports provided in said cylinder for selective alignment with said second passage means.

2,751,147. SUPPORT FOR REFRIGERATING APPARATUS. Clifford H. Wurtz, Dayton, Ohio, assignor to General Motors Corp., Detroit, Mich., a corporation of Delaware. Application Dec. 20, 1952, Serial No. 327,073. 2 Claims. (Cl. 230-235.)



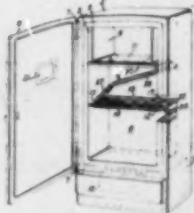
1. In combination: a support, a unit comprising a sealed casing having a motor and a compressor driven thereby located within said casing and adapted to be started and stopped, means suspendingly mounting said unit at two equally spaced apart points only therefrom from said support for limited vibrational movement relative thereto, each of said means including a bracket having its lower end secured to said support and a rigid member fixed to said unit, said rigid member extending outwardly away from said unit and thence upwardly a substantial distance above its fixed point thereto along a side of said casing to form a lever-like element thereon, said bracket extending upwardly from its secured lower end around the fixed point of said lever-like element to said unit and being resiliently clamped to the upper end of said lever-like element, the starting and stopping of said motor and said compressor imparting a rotary force to said casing, and the spacing of said fixed point of said lever-like element below the clamping of said bracket to the upper end thereof together with said two point mounting of said unit causing the rotary force imparted to said casing to be converted into a swinging movement of said unit about said resilient clamp in pendulum fashion throughout a limited arc relative to said support.

2,751,152. AIR CONDITIONING CONTROL SYSTEM. Francis R. Ellenberger, Verona, N. J., assignor to General Electric Co., a corporation of New York. Application Aug. 7, 1952, Serial No. 303,065. 4 Claims. (Cl. 236-1.)



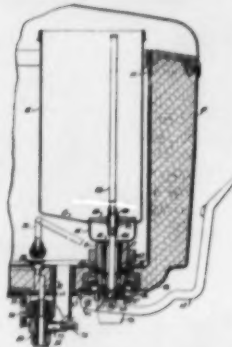
1. A control system for controlling the heat transfer between a heat transfer fluid and a second fluid to be conditioned in accordance with changes in the temperature of said second fluid, said system comprising a device for controlling the rate of heat transfer between said fluids, a heat operated motor including an electrical resistance for actuating said device and for modulating the position of said device in accordance with the energization of said resistance, a thermostat responsive to the temperature of said second fluid, a pair of electrical contacts positioned to be closed by said thermostat at a predetermined low temperature, and switching means selectively movable to a first position for connecting said resistance to be energized upon closing of said contacts and to a second position to connect said resistance to be energized when said contacts are opened and to be shorted out upon positions effect opposite response of said device upon a closing of said contacts whereby said first and second like change in temperature.

2,751,197. REFRIGERATOR HUMIDIFIER. Howard E. Hartman, Stratford, Conn., and Charles S. Grimshaw, Harborside Township, Pa., assignors to General Electric Co., a corporation of New York. Application Jan. 5, 1953, Serial No. 329,598. 2 Claims. (Cl. 257-3.)



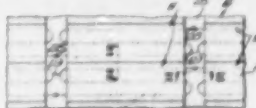
1. In a refrigerator, a food storage compartment, a butter conditioner cooled by air from said food storage compartment, said butter conditioner including a heating element and thermostat means responsive to the temperature of the air entering said butter conditioner from said food storage compartment, said thermostat means being effective when said temperature of said air from said food storage compartment decreases below a predetermined minimum for energizing said heating element thereby to increase the temperature of air in said butter conditioner, a receptacle disposed in said food storage compartment, said receptacle containing a supply of water, and a second heating element further contained by said receptacle, said second heating element being controlled by said thermostat means in said butter conditioner and also energized when the temperature of air from said food storage compartment decreases below said predetermined minimum for evaporating said supply of water thereby to maintain a satisfactory degree of humidity in said food storage compartment.

2,751,254. VALVE PARTICULARLY ADAPTED FOR BEVERAGE DISPENSERS. El Roy J. Kraft, Des Plaines, Ill., assignor to The Dole Valve Co., Chicago, Ill., a corporation of Illinois. Application Nov. 5, 1951, Serial No. 254,965. 4 Claims. (Cl. 299-150.)



1. A valve comprising a vertically extending housing having an interior cylindrical wall, a discharge outlet leading from the lower end of said housing, an inlet for liquid leading into said housing through said wall intermediate the ends thereof, a valve member movable within said housing and having wall portions at opposite ends thereof engageable with said interior cylindrical wall and an intermediate portion spaced inwardly from said cylindrical wall, a sealing ring within said housing and engaging the wall portion at the lower end of said valve member, for sealing said valve member to the lower end of said cylindrical wall, means for moving said valve member out of engagement with said sealing ring to provide a flow passage along said cylindrical wall to accommodate the delivery of liquid to said discharge outlet, and baffle means on said valve member spaced beneath said discharge outlet in alignment with said cylindrical wall in the flow path of liquid delivered through said discharge outlet and inclined with respect to said housing to deflect the liquid passing through said discharge outlet outwardly with respect thereto.

2,751,198. CEILING PLENUM AND AIR CONDITIONING SYSTEM. George Hopp, Hamden, Conn., assignor to Houdaille Industries, Inc., Detroit, Mich., a corporation of Michigan. Application Jan. 5, 1951, Serial No. 304,604. 1 Claim. (Cl. 257-124.)



In a ceiling plenum air-conditioning system, a plurality of rows of conditioning units, each unit comprising: a rectangular sheet metal pan having upstanding side and end walls and having a perforate bottom wall deformed to provide a plurality of grooves in spaced parallel relation to each other and to said side walls, a length of heat exchange tubing extending sinusoidally on said bottom wall and including straight portions in said grooves and curved connecting portions projecting beyond said end walls with each end of said length of tubing

also projecting beyond an end wall of said pan, and a block of sound absorbent material supported in said pan in spaced relation above said bottom wall and extending continuously over the entire cross section of the pan between the upstanding side and end walls thereof, said block having vertical edge surfaces sealed to said upstanding side and end walls to define therewith a plenum chamber sealed along its upper extremity, said units being disposed in aligned side-by-side relation in said rows with the end walls of the units of each row in spaced relation to the end walls of the adjacent rows, a plurality of im-perforate plates coplanar with said bot-

tom walls of said units and extending between the end walls of the units of each row and the end walls of the units of the adjacent rows, means disposed above said plates for interconnecting the heat exchange tubing of the units, said plates cooperating with said end walls to define air ducts between the rows of conditioning units and space for said connecting portions of the lengths of tubing with said plates being removable from below to provide access to said tubing interconnecting means, and each of said end walls being apertured to provide communication between said air duct and the plenum chambers of the units.

(To Be Continued)

CLASSIFIED ADVERTISING

RATES for "Positions Wanted" \$7.50 per insertion. Limit 50 words. 15¢ per word over 50.

RATES for all other classifications \$10.00 per insertion. Limit 50 words. 20¢ per word over 50.

ADVERTISEMENTS set in usual classified style. Box addresses count as five words, other address by actual word count. Please send payment with order.

POSITIONS WANTED

MANUFACTURER'S REPRESENTATIVE for plumbing, heating and air conditioning supplies. Texas and Oklahoma territory. Have warehousing and shipping facilities. CODY COMPANY, 2411 White Settlement Road, Fort Worth, Texas.

SERVICE REPRESENTATIVE, preferably with manufacturer. Service experience with residential and commercial Frigidaire service organization. Nine years self-employed, past six years doing solely commercial and truck refrigeration. Am 31 years of age, will travel in the Midwest. BOX A5663, Air Conditioning & Refrigeration News.

EXPERIENCED AIR conditioning (refrigeration) cooling and heating service engineering manager—Eighteen years' experience. Interested in connection with manufacturer or distributor. Qualified to assume over-all direction of service or application engineering—supervise, training of distributors and dealers in application, installation, service, conduct field schools, train field men. Service and application manual formulating—Self-starter, ability to work with people. BOX A5678, Air Conditioning & Refrigeration News.

POSITIONS AVAILABLE

SALES ENGINEERING opportunities available Houston district office of prominent manufacturer of large tonnage systems. Work with distributors, dealers and wholesalers. Preferred age between 25 and 35. Salary plus incentive program. Write or call D. G. Merrill, ACME INDUSTRIES, INC., Jackson, Michigan.

OPPORTUNITY FOR manufacturer's representative: To increase your earnings, sell a full line of freezers, beverage coolers, display cases, dual temperature reach-ins and walk-ins. We manufacture a quality line to meet competition. Territories now available, write HOWARD REFRIGERATOR CO., INC., 4475 Worth Street, Philadelphia 24, Pa.

WANTED IN Southern California competent refrigeration and air conditioning engineers, draftsmen and refrigeration fitters. Due to serious labor shortage the Refrigeration and Air Conditioning Contractors Association of Southern California has undertaken the responsibility of recruiting employees for members of the Association. Upon your inquiry setting forth general type of work we will forward to you an appropriate questionnaire. REFRIGERATION AND AIR CONDITIONING CONTRACTORS ASSOCIATION OF SOUTHERN CALIFORNIA, INC., 453 South Spring Street, Los Angeles 13, California.

VENTILATION AND air conditioning designers and draftsmen. Large New York City organization of Naval Architects and Marine Engineers offers many interesting positions, including some openings for group leaders. Some marine experience desirable but not essential. Large modern offices, good salaries, rapid advancement and all employee benefits. Phone or send resume to: M. ROSENBLATT & SON, 253 Broadway, New York City 7, Attention: Mr. N. Friedland, BEekman 3-7490.

ESTABLISHED MANUFACTURERS' representative calling on refrigeration men, to sell complete line of commercial refrigeration in Michigan and Indiana. THE C. SCHMIDT COMPANY, 1712 John Street, Cincinnati 14, Ohio.

SALES ENGINEERS experienced in small and large commercial and industrial air conditioning refrigeration equipment are required for expanded operations in Chicago and other Mid-

west sales offices. Some travel involved. Expenses, salary, and incentive. Apply only by letter giving full details as to background and experience. Replies confidential. Write T. J. Fyock, Personnel Manager, WESTINGHOUSE ELECTRIC CORPORATION, P.O. Box 510, Staunton, Virginia.

SALES REPRESENTATIVE wanted, age no barrier, for sale of new development in the air conditioning field to jobbers. This new product is one of the three major components of the refrigeration cycle and will completely change existing conventional field practice. It is extremely saleable and will reward a hard-hitting individual with above average earnings on a liberal commission basis. Exclusive protected territories. Previous experience in air conditioning, refrigeration, plumbing, or heating industries desirable but not essential. Engineering background helpful. The company offering this product is now the leading manufacturer of one of the three major components of the refrigeration system. Write now, giving us personal details as well as present activity to BOX A5650, Air Conditioning & Refrigeration News.

FOR PAST twenty-five years, we have devoted our entire efforts to installation of air conditioning equipment from residential to three hundred tons capacity. Right now, we need one more experienced man for installation and service. Knowledge of Carrier equipment advantageous. Permanent, steady top pay. Ohio. BOX A5676, Air Conditioning & Refrigeration News.

ENGINEERS — COLLEGE graduates with experience for development, design and production engineering work on heat pump air conditioning systems and components. Unusual opportunity in growth business with substantial company located in northern New Jersey, metropolitan area. Salary commensurate with experience. Write details of background and experience in confidence to BOX A5677, Air Conditioning & Refrigeration News.

EQUIPMENT FOR SALE

FOR SALE—500 all steel equipment food lockers, 18" wide and 30" long guaranteed in excellent condition. Drawers \$5.50 ea. Door type \$4.00 ea. Will consider best offer. CONNECTICUT ICE MACHINE CO., INC., 7 Madison Street, South Norwalk, Connecticut.

THOUSANDS OF air conditioners are now equipped with Keaco automatic condensate water disposal pumps available at your local wholesalers in 10 and 20 foot heads 110 or 220 volts only 9" high, water inlet 5 inches from floor. Wholesalers write to KESCO PRODUCTS, P. O. Box 84, Springfield Gardens 13, New York.

GUARANTEED BRAND new condensing units at special closeout prices! 3/4" h.p. \$34.00, 1 h.p. \$34.40, 1 1/4" h.p. \$36.00, 1 3/4" h.p. \$36.40, 2 h.p. \$36.80, 2 1/4" h.p. \$37.20, 2 3/4" h.p. \$37.60, 3 h.p. \$38.00, 3 1/4" h.p. \$38.40, 3 3/4" h.p. \$38.80, 4 h.p. \$39.20, 4 1/4" h.p. \$39.60, 4 3/4" h.p. \$40.00, 5 h.p. \$40.40, 5 1/4" h.p. \$40.80, 5 3/4" h.p. \$41.20, 6 h.p. \$41.60, 6 1/4" h.p. \$42.00, 6 3/4" h.p. \$42.40, 7 h.p. \$42.80, 7 1/4" h.p. \$43.20, 7 3/4" h.p. \$43.60, 8 h.p. \$44.00, 8 1/4" h.p. \$44.40, 8 3/4" h.p. \$44.80, 9 h.p. \$45.20, 9 1/4" h.p. \$45.60, 9 3/4" h.p. \$46.00, 10 h.p. \$46.40, 10 1/4" h.p. \$46.80, 10 3/4" h.p. \$47.20, 11 h.p. \$47.60, 11 1/4" h.p. \$48.00, 11 3/4" h.p. \$48.40, 12 h.p. \$48.80, 12 1/4" h.p. \$49.20, 12 3/4" h.p. \$49.60, 13 h.p. \$50.00, 13 1/4" h.p. \$50.40, 13 3/4" h.p. \$50.80, 14 h.p. \$51.20, 14 1/4" h.p. \$51.60, 14 3/4" h.p. \$52.00, 15 h.p. \$52.40, 15 1/4" h.p. \$52.80, 15 3/4" h.p. \$53.20, 16 h.p. \$53.60, 16 1/4" h.p. \$54.00, 16 3/4" h.p. \$54.40, 17 h.p. \$54.80, 17 1/4" h.p. \$55.20, 17 3/4" h.p. \$55.60, 18 h.p. \$56.00, 18 1/4" h.p. \$56.40, 18 3/4" h.p. \$56.80, 19 h.p. \$57.20, 19 1/4" h.p. \$57.60, 19 3/4" h.p. \$58.00, 20 h.p. \$58.40, 20 1/4" h.p. \$58.80, 20 3/4" h.p. \$59.20, 21 h.p. \$59.60, 21 1/4" h.p. \$60.00, 21 3/4" h.p. \$60.40, 22 h.p. \$60.80, 22 1/4" h.p. \$61.20, 22 3/4" h.p. \$61.60, 23 h.p. \$62.00, 23 1/4" h.p. \$62.40, 23 3/4" h.p. \$62.80, 24 h.p. \$63.20, 24 1/4" h.p. \$63.60, 24 3/4" h.p. \$64.00, 25 h.p. \$64.40, 25 1/4" h.p. \$64.80, 25 3/4" h.p. \$65.20, 26 h.p. \$65.60, 26 1/4" h.p. \$66.00, 26 3/4" h.p. \$66.40, 27 h.p. \$66.80, 27 1/4" h.p. \$67.20, 27 3/4" h.p. \$67.60, 28 h.p. \$68.00, 28 1/4" h.p. \$68.40, 28 3/4" h.p. \$68.80, 29 h.p. \$69.20, 29 1/4" h.p. \$69.60, 29 3/4" h.p. \$70.00, 30 h.p. \$70.40, 30 1/4" h.p. \$70.80, 30 3/4" h.p. \$71.20, 31 h.p. \$71.60, 31 1/4" h.p. \$72.00, 31 3/4" h.p. \$72.40, 32 h.p. \$72.80, 32 1/4" h.p. \$73.20, 32 3/4" h.p. \$73.60, 33 h.p. \$74.00, 33 1/4" h.p. \$74.40, 33 3/4" h.p. \$74.80, 34 h.p. \$75.20, 34 1/4" h.p. \$75.60, 34 3/4" h.p. \$76.00, 35 h.p. \$76.40, 35 1/4" h.p. \$76.80, 35 3/4" h.p. \$77.20, 36 h.p. \$77.60, 36 1/4" h.p. \$78.00, 36 3/4" h.p. \$78.40, 37 h.p. \$78.80, 37 1/4" h.p. \$79.20, 37 3/4" h.p. \$79.60, 38 h.p. \$80.00, 38 1/4" h.p. \$80.40, 38 3/4" h.p. \$80.80, 39 h.p. \$81.20, 39 1/4" h.p. \$81.60, 39 3/4" h.p. \$82.00, 40 h.p. \$82.40, 40 1/4" h.p. \$82.80, 40 3/4" h.p. \$83.20, 41 h.p. \$83.60, 41 1/4" h.p. \$84.00, 41 3/4" h.p. \$84.40, 42 h.p. \$84.80, 42 1/4" h.p. \$85.20, 42 3/4" h.p. \$85.60, 43 h.p. \$86.00, 43 1/4" h.p. \$86.40, 43 3/4" h.p. \$86.80, 44 h.p. \$87.20, 44 1/4" h.p. \$87.60, 44 3/4" h.p. \$88.00, 45 h.p. \$88.40, 45 1/4" h.p. \$88.80, 45 3/4" h.p. \$89.20, 46 h.p. \$89.60, 46 1/4" h.p. \$90.00, 46 3/4" h.p. \$90.40, 47 h.p. \$90.80, 47 1/4" h.p. \$91.20, 47 3/4" h.p. \$91.60, 48 h.p. \$92.00, 48 1/4" h.p. \$92.40, 48 3/4" h.p. \$92.80, 49 h.p. \$93.20, 49 1/4" h.p. \$93.60, 49 3/4" h.p. \$94.00, 50 h.p. \$94.40, 50 1/4" h.p. \$94.80, 50 3/4" h.p. \$95.20, 51 h.p. \$95.60, 51 1/4" h.p. \$96.00, 51 3/4" h.p. \$96.40, 52 h.p. \$96.80, 52 1/4" h.p. \$97.20, 52 3/4" h.p. \$97.60, 53 h.p. \$98.00, 53 1/4" h.p. \$98.40, 53 3/4" h.p. \$98.80, 54 h.p. \$99.20, 54 1/4" h.p. \$99.60, 54 3/4" h.p. \$100.00, 55 h.p. \$100.40, 55 1/4" h.p. \$100.80, 55 3/4" h.p. \$101.20, 56 h.p. \$101.60, 56 1/4" h.p. \$102.00, 56 3/4" h.p. \$102.40, 57 h.p. \$102.80, 57 1/4" h.p. \$103.20, 57 3/4" h.p. \$103.60, 58 h.p. \$104.00, 58 1/4" h.p. \$104.40, 58 3/4" h.p. \$104.80, 59 h.p. \$105.20, 59 1/4" h.p. \$105.60, 59 3/4" h.p. \$106.00, 60 h.p. \$106.40, 60 1/4" h.p. \$106.80, 60 3/4" h.p. \$107.20, 61 h.p. \$107.60, 61 1/4" h.p. \$108.00, 61 3/4" h.p. \$108.40, 62 h.p. \$108.80, 62 1/4" h.p. \$109.20, 62 3/4" h.p. \$109.60, 63 h.p. \$110.00, 63 1/4" h.p. \$110.40, 63 3/4" h.p. \$110.80, 64 h.p. \$111.20, 64 1/4" h.p. \$111.60, 64 3/4" h.p. \$112.00, 65 h.p. \$112.40, 65 1/4" h.p. \$112.80, 65 3/4" h.p. \$113.20, 66 h.p. \$113.60, 66 1/4" h.p. \$114.00, 66 3/4" h.p. \$114.40, 67 h.p. \$114.80, 67 1/4" h.p. \$115.20, 67 3/4" h.p. \$115.60, 68 h.p. \$116.00, 68 1/4" h.p. \$116.40, 68 3/4" h.p. \$116.80, 69 h.p. \$117.20, 69 1/4" h.p. \$117.60, 69 3/4" h.p. \$118.00, 70 h.p. \$118.40, 70 1/4" h.p. \$118.80, 70 3/4" h.p. \$119.20, 71 h.p. \$119.60, 71 1/4" h.p. \$120.00, 71 3/4" h.p. \$120.40, 72 h.p. \$120.80, 72 1/4" h.p. \$121.20, 72 3/4" h.p. \$121.60, 73 h.p. \$122.00, 73 1/4" h.p. \$122.40, 73 3/4" h.p. \$122.80, 74 h.p. \$123.20, 74 1/4" h.p. \$123.60, 74 3/4" h.p. \$124.00, 75 h.p. \$124.40, 75 1/4" h.p. \$124.80, 75 3/4" h.p. \$125.20, 76 h.p. \$125.60, 76 1/4" h.p. \$126.00, 76 3/4" h.p. \$126.40, 77 h.p. \$126.80, 77 1/4" h.p. \$127.20, 77 3/4" h.p. \$127.60, 78 h.p. \$128.00, 78 1/4" h.p. \$128.40, 78 3/4" h.p. \$128.80, 79 h.p. \$129.20, 79 1/4" h.p. \$129.60, 79 3/4" h.p. \$130.00, 80 h.p. \$130.40, 80 1/4" h.p. \$130.80, 80 3/4" h.p. \$131.20, 81 h.p. \$131.60, 81 1/4" h.p. \$132.00, 81 3/4" h.p. \$132.40, 82 h.p. \$132.80, 82 1/4" h.p. \$133.20, 82 3/4" h.p. \$133.60, 83 h.p. \$134.00, 83 1/4" h.p. \$134.40, 83 3/4" h.p. \$134.80, 84 h.p. \$135.20, 84 1/4" h.p. \$135.60, 84 3/4" h.p. \$136.00, 85 h.p. \$136.40, 85 1/4" h.p. \$136.80, 85 3/4" h.p. \$137.20, 86 h.p. \$137.60, 86 1/4" h.p. \$138.00, 86 3/4" h.p. \$138.40, 87 h.p. \$138.80, 87 1/4" h.p. \$139.20, 87 3/4" h.p. \$139.60, 88 h.p. \$140.00, 88 1/4" h.p. \$140.40, 88 3/4" h.p. \$140.80, 89 h.p. \$141.20, 89 1/4" h.p. \$141.60, 89 3/4" h.p. \$142.00, 90 h.p. \$142.40, 90 1/4" h.p. \$142.80, 90 3/4" h.p. \$143.20, 91 h.p. \$143.60, 91 1/4" h.p. \$144.00, 91 3/4" h.p. \$144.40, 92 h.p. \$144.80, 92 1/4" h.p. \$145.20, 92 3/4" h.p. \$145.60, 93 h.p. \$146.00, 93 1/4" h.p. \$146.40, 93 3/4" h.p. \$146.80, 94 h.p. \$147.20, 94 1/4" h.p. \$147.60, 94 3/4" h.p. \$148.00, 95 h.p. \$148.40, 95 1/4" h.p. \$148.80, 95 3/4" h.p. \$149.20, 96 h.p. \$149.60, 96 1/4" h.p. \$150.00, 96 3/4" h.p. \$150.40, 97 h.p. \$150.80, 97 1/4" h.p. \$151.20, 97 3/4" h.p. \$151.60, 98 h.p. \$152.00, 98 1/4" h.p. \$152.40, 98 3/4" h.p. \$152.80, 99 h.p. \$153.20, 99 1/4" h.p. \$153.60, 99 3/4" h.p. \$154.00, 100 h.p. \$154.40, 100 1/4" h.p. \$154.80, 100 3/4" h.p. \$155.20, 101 h.p. \$155.60, 101 1/4" h.p. \$156.00, 101 3/4" h.p. \$156.40, 102 h.p. \$156.80, 102 1/4" h.p. \$157.20, 102 3/4" h.p. \$157.60, 103 h.p. \$158.00, 103 1/4" h.p. \$158.40, 103 3/4" h.p. \$158.80, 104 h.p. \$159.20, 104 1/4" h.p. \$159.60, 104 3/4" h.p. \$160.00, 105 h.p. \$160.40, 105 1/4" h.p. \$160.80, 105 3/4" h.p. \$161.20, 106 h.p. \$161.60, 106 1/4" h.p. \$162.00, 106 3/4" h.p. \$162.40, 107 h.p. \$162.80, 107 1/4" h.p. \$163.20, 107 3/4" h.p. \$163.60, 108 h.p. \$164.00, 108 1/4" h.p. \$164.40, 108 3/4" h.p. \$164.80, 109 h.p. \$165.20, 109 1/4" h.p. \$165.60, 109 3/4" h.p. \$166.00, 110 h.p. \$166.40, 110 1/4" h.p. \$166.80, 110 3/4" h.p. \$167.20, 111 h.p. \$167.60, 111 1/4" h.p. \$168.00, 111 3/4" h.p. \$168.40, 112 h.p. \$168.80, 112 1/4" h.p. \$169.20, 112 3/4" h.p. \$169.60, 113 h.p. \$170.00, 113 1/4" h.p. \$170.40, 113 3/4" h.p. \$170.80, 114 h.p. \$171.20, 114 1/4" h.p. \$171.60, 114 3/4" h.p. \$172.00, 115 h.p. \$172.40, 115 1/4" h.p. \$172.80, 115 3/4" h.p. \$173.20, 116 h.p. \$173.60, 116 1/4" h.p. \$174.00, 116 3/4" h.p. \$174.40, 117 h.p. \$174.80, 117 1/4" h.p. \$175.20, 117 3/4" h.p. \$175.60, 118 h.p. \$176.00, 118 1/4" h.p. \$176.40, 118 3/4" h.p. \$176.80, 119 h.p. \$177.20, 119 1/4" h.p. \$177.60, 119 3/4" h.p. \$178.00, 120 h.p. \$178.40, 120 1/4" h.p. \$178.80, 120 3/4" h.p. \$179.20, 121 h.p. \$179.60, 121 1/4" h.p. \$180.00, 121 3/4" h.p. \$180.40, 122 h.p. \$180.80, 122 1/4" h.p. \$181.20, 122 3/4" h.p. \$181.60, 123 h.p. \$182.00, 123 1/4" h.p. \$182.40, 123 3

Calif. Heating Groups' Stamp Plans--

(Concluded from Page 1, Col. 4) ing, 870 Market St., San Francisco 2.

Knowles was graduated by Los Angeles Polytechnic. He learned the sheet metal trade in a Los Angeles shop, became a journeyman, now holds a withdrawal card from the Sheet Metal Workers' International Association. He has been a sales engineer, manufacturer's representative, and contractor.

Knowles is a member of the American Society of Heating & Air-Conditioning Engineers, is licensed as a professional engineer, mechanical engineering classification, by the State of California. He holds License 54101 from the California Contractors' State License Board.

Original institute organizers include J. J. Howell of Fresno, and the late Fred Granholt of

Oakland, immediate past president of SMCANC.

R. M. Johnson, president of the Institute of Heating & Air Conditioning Industries, announced recently that over 15,000 "stamps" have been delivered to manufacturers and suppliers of heating equipment marketed in southern California in the "kick-off" period from Oct. 15 to Nov. 1. Thirty-three manufacturers and supplier "lead the list."

"During the last month, institute speaking teams have talked to over 350 contractors and more than 50 manufacturers and suppliers in their efforts to put the promotion on a solid basis," it was reported by the *Institute News*. "There is every indication that the 'stamp plan' is here—to stay—and tremendous results can be expected in the near future."

Associations in this and re-

lated fields throughout the Southland are said to have officially endorsed the plan of promotion.

"It was recognized at an early stage that the 'Certified Installation' part of the over-all program was controversial among the contractors and as a result much study is being given this part to eliminate any complaints," the publication said. "It was announced that a corrected and acceptable program will be offered sometime around the first of the year."

"Only forced air, floor, and wall furnaces are included in the plan at the present time, although gravity furnaces, unit heaters, and air conditioning systems are slated for inclusion in the near future. These units will probably be included on a 'new contract' basis whereas 'delivered' units is the present basis."

Trion Cuts Prices--

(Concluded from Page 1, Col. 3)

The pricing system change, said E. W. Meyers, Trion president, is aimed at converting the air cleaner industry from a high margin-low volume basis to a low margin-high volume preparing for "greatly" expanded sales in the near future.

Trion expects to double its sales next year. Volume for the fiscal year ended July 31 totaled about \$1.3 million.

Prices of electronic air cleaners were raised an average 8% Oct. 1, Meyers stated. He also noted that Trion has licensed Minneapolis-Honeywell Regulator Co. to manufacture its electronic air cleaners in return for royalties on its present patents.

In the future, Meyers, continued, the two companies will freely exchange patents on new developments.

Seeks To Educate Public To Better Units

Cost of the average new home reportedly includes only 5% or less for warm air heating. The institute seeks to educate the public and builders to advantages of a high type of installation costing 10% or more of total building costs.

Under the institute's stamp plan, stamps are sold to manufacturers or their representatives. A stamp worth \$1 is affixed to each central furnace and unit heater. A stamp worth 50 cents is affixed to each wall heater or floor furnace.

Stamps Affixed to Units Or Stapled to Crates

Stamps may be affixed to equipment, or placed in special envelopes furnished by the institute for stapling to the outside of the crate.

When the plan went into effect most manufacturers increased their prices enough to cover the stamp cost. The cost of the stamp is passed on to the public.

Manufacturers with plants in this area are participating. The institute also has cooperation from several other national manufacturers who have representation in the area.

Membership of the Warm Air Heating Institute of Northern California is from the following sources:

Members of the Sheet Metal Contractors Association of Northern California; manufacturers of warm air heating equipment; wholesale distributors of warm air heating equipment; and licensed warm air heating contractors.

Administration is vested in a nine-member board of directors. Five members and two alternates are chosen by SMCANC. Three members and one alternate represent manufacturers. One member and one alternate represent wholesale distributors.

Dar Knowles is full-time executive manager of the institute with offices in the Flood build-



UNARCO AIR CONDITIONING PRODUCTS

National-U.S. Radiator Corporation

JOHNSTOWN, PENNSYLVANIA

OFFICES
NEW YORK
ATLANTA
SAN FRANCISCO

AN IMPORTANT NOTICE To the Air Conditioning Industry...

TO ALL UNARCO DISTRIBUTORS AND DEALERS

The recent acquisition by National-U. S. Radiator Corporation of the Air Conditioning Division of Union Asbestos & Rubber Company will afford you a continuation of the same high quality air conditioning equipment that UNARCO has furnished heretofore. UNARCO products have achieved a national reputation for excellent design, outstanding performance and demonstrated reliability. This reputation will be maintained.

The entire resources of National-U. S. Radiator Corporation are behind UNARCO Air Conditioning Products. Our intensive program of research and development has as its prime objective the achievement of leadership in this field.

UNARCO equipment will continue to be manufactured in Greenville, Illinois, and is being distributed by the same selling organization and through the same channels as in the past. We are looking forward to your continuing as very valued customers under this new management arrangement.

Sincerely yours,

C. M. Baumgardner

Senior Vice President for Sales
NATIONAL-U. S. RADIATOR CORPORATION

Manufacturers of Commercial-Industrial-Residential Air Conditioning Equipment